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Compact Broadcast Console

IBC Special:

Outside Broadcast
Loudness Issues
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ADAM S3X-H

The Great Leap Forward?

UK SCREEN 2009 Sound Awards the conch
in association with Pinewood Studios and the UK Film Council

Conch Award Nominations

The Votes Are In...

A NEWBAY MEDIA PUBLICATION

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WORLDWIDE EDITION
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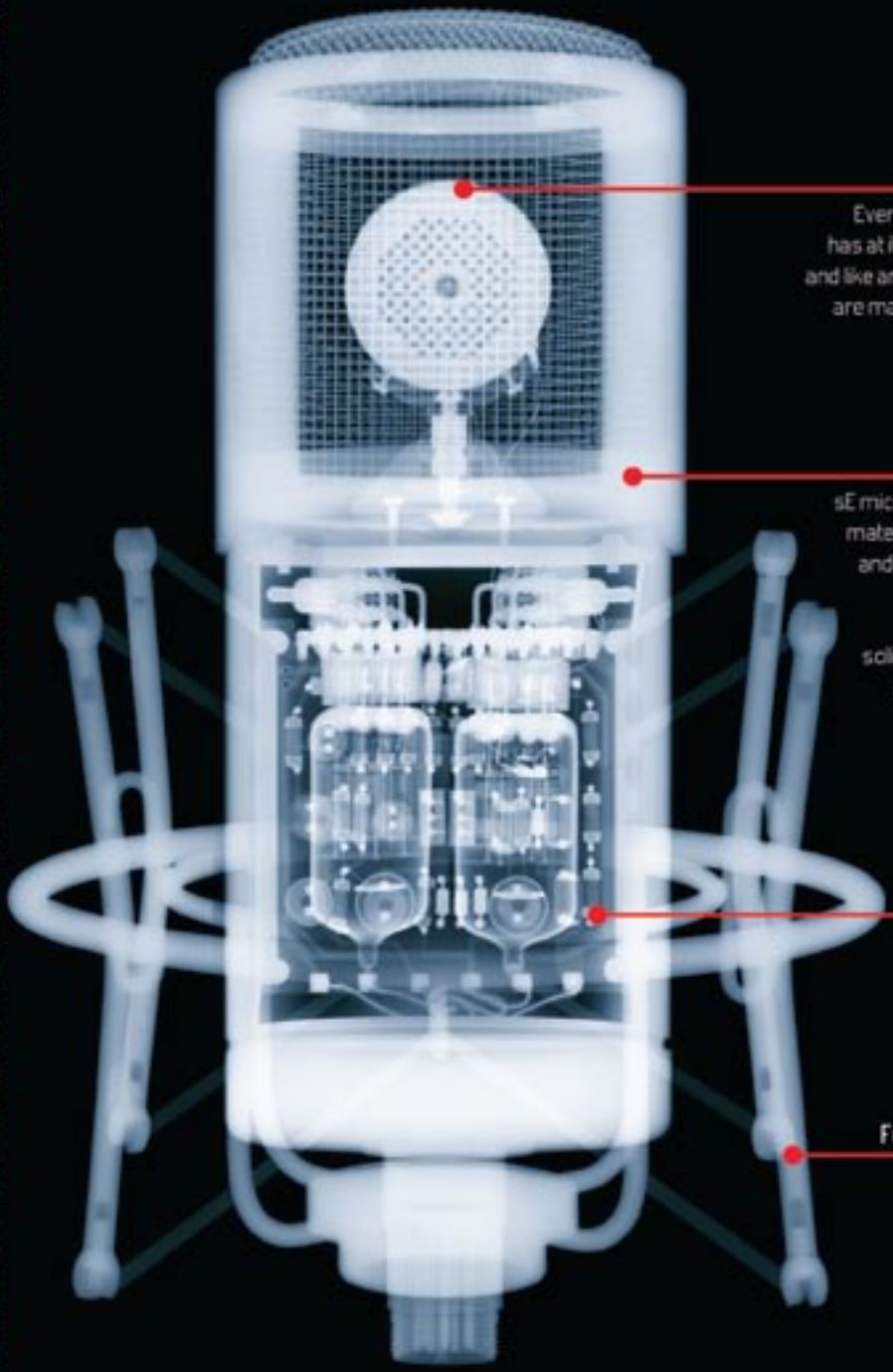

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THE CONCH AWARDS 30
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leader

Imagine that you're creating, say, the sound of a car that moves off from a standing start, accelerates, then disappears off into the distance. Now, rather than going off, finding the right car and the right environment and the recording gear, and taking the time to record, edit, and so on, you simply turn to your library of procedural components. You choose the road surface, the engine, and body specifications. Then you assign a fader as the accelerator pedal and automate the car's audio with one deft movement. You might require a slightly different quality when you get to the final mix, so instead of finding another recording or delving deep into your sound design pockets, you simply turn to your car model and tweak the engine – maybe give it a bigger exhaust (your procedural model includes a pipe model for the exhaust that contributes to the overall model).

Depending on how you look at this you might find it exciting, or frightening, or sad – or you might see it as an opportunity for some re-training. Don't panic (can't be sure from here whether you're panicking or not) – the end of Foley, effects recording, and sound design is not nigh. Actually we're quite a way from this scenario… though we could be said to be well and truly en-route.

If you view sampled and recorded assets in both linear and non-linear media as discrete dollar signs – a fistful stapled to each and every squeak, step, clink or bang that has to be laid up – you'll probably already be doing mental calculations on what might be saved.

If you view sampled and recorded assets as the product of years of experience, knowledge, art, and artifice, then you might look at procedural audio in much the same way as drummers once looked at drum machines. Remember though, some drummers learned to be programmers and masters of the new technology, and others, well, just carried on drumming (quite successfully too).

What we can say for sure is that procedural audio is very interesting – it's too interesting to ignore any longer. Of course, there are a lot of interesting things in the world that do get ignored, but these don't have anything to do with audio (apparently). To that end, you should make a point of reading the piece about procedural audio on page 56 of this issue. It's early days yet, and creation of even basic procedural assets is not for the faint of heart, nor is it for anybody without a 'try and try again… and again' attitude. But at the very least, you won't be able to complain that we didn't mention it before…

Paul Mac, Editor

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AUDIOMEDIA

www.audiomedia.com

AUDIO MEDIA (Europe), 1st Floor, 1 Cabot House,
Compass Point Business Park, St Ives, Cambs, PE27 5JL.
Telephone: +44 (0)1480 461555 – Facsimile: +44 (0)1480 461550

General E-mail: mail@audiomedia.com – Press Release E-mail: pr@audiomedia.com

Managing Director
Angela Brown
a.brown@audiomedia.com

Associate Group Publisher
Nick Humbert
n.humbert@audiomedia.com

Editor In Chief
Paul Mac
p.mac@audiomedia.com

News/AMSR Editor
Jo Fletcher-Cross
jfcross@audiomedia.com

Production Editor
Lanna Marshall
l.marshall@audiomedia.com

Design & Production Manager
John-Paul Shirreffs
jp.shirreffs@audiomedia.com

Regional Sales Manager
Bob Kennedy
bkennedy@imaspub.com
+44 (0)1279 861264

US Sales Manager
Dave Carson
dcarson@nbmedia.com
+1 615 776 1359

Circulations Manager/
Administration
Jo Perriss
mail@audiomedia.com

Subscriptions
subs@audiomedia.com
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*Within Broadcast & Production

"At Envy our engineers and audio team have worked very closely with Scrub from design to support on every aspect of our audio technology, from Icon consoles to Dolby encoding, networked sound effects management to microphone stands. We see Scrub as part of the team."

Dave Cadle, Envy

"Scrub understand the business we are in and the importance of top-quality sound to our facility and our clients. We have the people, and we happily rely on Scrub to provide the technology."

Simon Kanjee, Evolutions

"Throughout The Farm's history, the Scrub team has worked hand-in-hand with our renowned audio department. From state of the art Pro Tools systems to the latest Dolby encoding/decoding hardware, we've always trusted Scrub to understand all aspects of our technology needs."

David Klafkowski, The Farm

"Our clients demand the highest standards. In turn, we demand the same of our suppliers. Scrub have always delivered the audio expertise, a range of great technology and any support we need, consistently living up to their helpful, knowledgeable and supportive reputation."

Jim Jacobs, Prime Focus London / blue

"Air is internationally renowned for excellence. In maintaining that standard we choose the best technology partners, and work with them closely. Scrub are very much our kind of people."

Dan Gable, Air Post Production

"Pro Tools is now clearly established as the market leader and Scrub were able to demonstrate a very solid business case for making the move. Scrub are renowned for offering a very high level of service and that was certainly our experience, with Ben (Nemes) and his team always available and particularly helpful."

Chris Rodmell, Edit Store

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NEW USER

Brauner & Peter Gabriel

Peter Gabriel has purchased five Brauner VMA and six Phanthera mics for his latest project *Scratch My Back*. Gabriel used Brauners for a National Geographic score for the IMAX movie *Sea Monsters*. Five VMAs were used for the main surround system, plus sixteen Brauner Phantheras for spots. Gabriel commented: "Dirk's microphones are open and natural and inspiring..."

www.brauner-microphones.de

NEW UPDATES

Steinberg

Steinberg has released a set of updates to its Cubase 5, MR816 CSX, and CC121 products. The added capabilities include extended control options for CC121, workflow enhancements for MR816 CSX/X, plus additions and refinements to Cubase 5, including extended connectivity with Yamaha's MOTIF XS. For example, The AI Knob now offers control for VST 2.x plug-ins, for ultra-quick 'point and control' of any parameter that supports use of the mouse wheel.

www.steinberg.net

NEW PRODUCTS

Powered Plug-ins

Universal Audio has announced the release of version 5.4.0 of its UAD Powered Plug-In software, available as a free download from the Universal Audio website. The main features include reduced RTAS latency, reduced host loads on multi-processor systems (Windows), and reduced host CPU spiking/dropouts in Windows Vista.

The software also features 14-day trial versions of UAD Fatso Jr/Sr Analogue tape simulator and compressor, the UAD Neve EQ plug-ins, and the new UAD EMT 250 Classic Electronic Reverberator plug-in.

The EMT 250 features the very same algorithm as used in the original 1976 EMT 250 reverb, and is fully endorsed by EMT Studiotechnik GmbH.

www.uaudio.com

NEW USER

Telefunken & Hawley

Pulp guitarist Richard Hawley has used the Telefunken Elektroakustik U47 exclusively to record vocals for his new solo album, Truelove's Gutter, set to be released on Mute on September 21. Recorded in Hawley's hometown of Sheffield, UK, at Yellow Arch studios. Hawley commented on the microphone: "Unity Audio gave us four or five Telefunken mics to try, and the Telefunken U47 won by a mile. It was the first time I ever heard my voice sounding the way it actually is. Incredible presence, warmth, and monumental detail." Hawley bought the microphone from UK Distributor Unity Audio, of whom he said: "The service from Kevin at Unity Audio was above and beyond the call of duty."

Unity Audio

www.unityaudio.com

NEW DISTRIBUTION

KMR & Soundman

KMR Audio is now distributing the Soundman Microphone range from Germany.

The Soundman OKM original head-microphones are binaural Elektret-microphones that come with an enclosed A3 adapter. The company manufactures the Soundman Dummy Head for binaural recording.

www.kmraudio.com

NEW PRODUCT

Focusrite Saffire

Focusrite is now shipping the new Saffire PRO 24 DSP, a 16-input/8-output FireWire audio interface that features VRM monitoring technology (monitoring and environment emulations over headphones), real-time DSP-powered tracking plug-ins (Studio Suite Compression, Gating, EQ, and Reverb plug-ins).

www.focusrite.com

A Legend In His Own Time

Dirk Brauner has been perfecting the art of microphones for over a decade. Hand crafted in Germany with a passion, it's no wonder Brauner mics are coveted by the world's most famous studios and producers.

For artists that deserve the best, Brauner is the only choice. Now Brauner offers a range of mics to suit a wide variety of budgets, all with the legendary sound that has made Brauner a name synonymous with quality.

" Never before did I come across a microphone of this caliber. The VMA is the best microphone I have ever worked with. "
Elliot Scheiner : Steely Dan, Toto, Van Morrison, Fleetwood Mac, Sting, ...
" I got a call from a friend of mine who was working on a Janet Jackson mix that we had recorded vocals on and the producer, Rodney Jerkins, kept asking about the vocal sound, what mic we used, if it was a vintage mic. I had to smile when I told him it was not a vintage mic but a Brauner VMA! I LOVE my mic! "
John Horesco IV: Jermaine Dupri, Janet Jackson, Usher, Mariah Carey, ...

In the UK:
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theartofmicrophones.com

brauner.microphones

NEW PRODUCT

SADiE Gets In The Box

SADiE is going native at IBC, according to a recent announcement from the British-based DAW manufacturer, now owned by Prism Sound. Effectively SADiE version 6, the new software will run independently of external hardware and come in four versions, three tailored to specific roles. Targeted radio producer, mastering, and TV post versions will be available, as will a 'fully loaded' version. Current LRX2 and H-Series hardware with the MTR software will continue as products in their own right – the new version 6 software will be available as an option for those systems.

The move has been attributed to the evolving demands of core customer bases. Jody Thorne, Sales and Marketing Manager for Prism Sound, commented: "The decision to launch a native software solution was driven by key customers, including the BBC, Radio France, YLE (Finland), and other SADiE-based international broadcasters, who are extremely keen to use SADiE as the craft editor into the future, but for support reasons have been pressured by their respective IT infrastructures to use native rather than proprietary hardware."

Prism Sound snapped up the respected SADiE brand and product line 18 months ago, before it was lost forever. Since then SADiE has found renewed strength and new sales. This, together with the strengthened relationship between VCS and SADiE, and the recent VCS/BBC framework contract, all spell good news for the brand.

SADiE
www.sadie.com

NEW PRODUCT

Sonodyne's European Debut

UK-based distributor The Audio Professionals is bringing the Sonodyne name to the European studio monitoring market. Already well established in Asia, this Indian manufacturer has been making and successfully selling pro audio equipment for 30 years. The two-way, bi-amped Sonodyne SM range features aluminium die-cast cabinets and claim to bring an accurate, smooth experience at a price that defies expectations. You can see the Sonodynes for the first time at this year's IBC show.
www.audiopros.eu

NEW USER

Dangerous & Dweezil

Dweezil Zappa has been on the road again, but this time he's living dangerously. The artist is taking a mobile recording/mix 'room service rig' with him featuring core components of 48 channels of Dangerous 2-Bus LT analogue summing, a Dangerous Monitor ST speaker controller, and a PC Audio Labs computer with dual AMD Opteron processors running Nuendo.

www.dangerousmusic.com

NEW PRODUCTS

Thermionic Culture

The Prodigy's Liam Howlett has been presented with a limited edition Thermionic Culture 'Culture Vulture'. Howlett was the very first customer to purchase a unit and the gesture is one of a number of 11th year celebrations for the manufacturer (the products 'go up to 11'). Three more limited edition products are to be released before the end of the year.

www.unityaudio.co.uk

Diary of Events

September 10-15
IBC 2009
Amsterdam, Netherlands

September 13-16
PLASA 2009
Earls Court, London

September 23-25
The NAB Radio Show
Philadelphia, USA

September 24
The Conch Awards
London, UK

October 9-12
127th AES Convention
New York, USA

October 13-16
Prolight + Sound
Shanghai, China

October 19-22
Satis Siel Le Radio 2008
Versailles, France

October 26-29
ShowEast9
Orlando, Florida

October 30 - November 1
Integrated Systems Russia
Moscow, Russia

NEW USER

Smart Moves At Magenta

eMerging, (UK distributor for Merging Technologies and Smart AV), has upgraded the audio dubbing systems at Magenta Penguin, a Midlands-based audio post-production company.

Already a Pyramix user, company founder Ron Hope upgraded to a version 6 system based on a MassCore 128 and a Post Pak suite of software, with a Smart AV Tango control surface on the front end.

Magenta Penguin founder Ron Hope commented: "...recently, I've become involved in a project that should keep me busy for the next year or so, and I thought it was time to bring my system more up to date for that. The eMerging team have been my support contacts for Pyramix for the past couple of years, and when they started telling me about the Tango, it seemed like everything was happening at the right time."

www.merginguk.com

FACILITY REFURB

AKA Comes Up For Air

AKA Design has been busy in London again. Breathe Post Production, recently re-branded to Air Post Production, has just opened its third facility in Shoreditch, and AKA was commissioned to design the interior and furniture for the new five storey building. The development includes 18 Final Cut Pro and Avid suites, and includes two grading suites based around Apple's Color, with Tangent panels.

Also in London, Technicolor commissioned AKA to design and install the reception desk and furniture for the various technical suites including Grading, Spirit, IQ, and a Digital cinema theatre.

www.akakdesign.co.uk

PRODUCT UPDATE

Euphonix has announced native support for its Artist series media controllers in Apple's new Final Cut Studio, with the implementation of Euphonix's EuCon Ethernet control protocol. Now the MC Transport, MC Control, MC Mix, and MC Color products, which combine soft keys, wheels, knobs, faders, trackballs, and more into specialised control surfaces, will work with Final Cut Pro, Soundtrack Pro, Color, and other applications in the Apple package.

www.euphonix.com

NEW PRODUCT

Vienna Symphonic Library's suite of nine audio processing tools, Vienna Suite, has just been released as a boxed edition. Up to now, it has been available as a download product only.

The latest version 1.1 includes Vienna's brand-new Convolution Reverb, plus Equaliizer, Master Equalizer, Limiter, Compressor, Multiband Limiter, PowerPan (stage positioning and audio angular analysis), Exciter, and Analyzer (including 120 band spectrum analyser and loudest frequency note display).

www.vsl.co.at

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"I was gobsmacked when I saw the Euphonix. I was blown away by the quality and the functionality. The Euphonix sounds fantastic and has the ability to behave precisely how you want; it can be tailored to exactly fit our needs."

Johnnie Burn,
co-owner Wave Amsterdam
who controls Nuendo via his two System 5-MC's

Wave Amsterdam

The System 5-MC is a DAW Controller with a difference - a big difference. Thanks to its EuCon control protocol, the System 5-MC tightly integrates with DAWs such as Pro Tools, Nuendo, Logic Pro, Digital Performer and Pyramix. Editing is made easier, workflow is enhanced and control is seamless. In a world of networked equipment, only Euphonix can provide true hands-on control over your favorite applications.

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Euphonix

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IBC: NEW PRODUCTS
Prism Sound

Prism Sound will be using IBC to show off two new lower cost versions of its dScope Series III audio analyser. Aimed at R&D and production line use, these analogue-only variants provide a much lower cost of entry compared to the analogue + digital flagships. Of the two systems, one will be aimed at loudspeaker and QC applications, and one aimed at more advanced analysis applications.

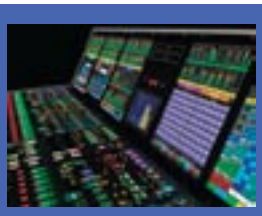
www.prismsound.com

IBC: NEW PRODUCTS
Jünger Audio

Jünger Audio's IBC offerings will include a complete C8000 LEVEL MAGIC-based set-up that offers a fully integrated workflow solution for managing surround sound and Dolby coded 5.1 audio signals in production, ingest, and playout. New hardware will include the ESDI card, which combines one SDI interface with one DSP unit that automatically handles individual audio Loudness processing. Also new is the ANA Series of input/processing cards, designed to help terrestrial re-broadcasters tackle loudness and synchronisation issues.

www.junger-audio.com

IBC: NEW PRODUCT
Calrec Artemis



One big launch at IBC will be the new Artemis console from Calrec. Artemis, which is based on the recently launched Apollo platform, uses the same Bluefin2 and Hydra2 technologies in a 'mid-sized' footprint, but with massive processing and routing capabilities. It also uses the same improved interface features, such as OLED displays and colour-changing pots.

At 48kHz, Bluefin2 technology gives Artemis up to 640 channels (processing paths), 128 program busses, 64 IFB/track outputs, and 32 auxiliaries. There's a second compressor/limiter in each channel, more than 70 minutes of assignable delay, and three independent APFL systems for multiple operator use.

Central to the Artemis console is a dedicated integrated router so that its I/O functions can be performed by Calrec's next-gen' networking system, Hydra2.

Hydra2 uses high capacity 8192 x 8192 cross-point routers and makes available a variety of I/O units to provide analogue, AES, MADI, SDI, and Dolby E formats. All use copper or fibre connectivity, and can be fitted with GPIO cards.

Calrec
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www.calrec.com

IBC: NEW PRODUCTS

There'll be plenty of new technology for audio people at this year's IBC in Amsterdam. In the recording pages (p9) you can read about the most significant change for SADiE in quite some time – the release of a native system. And, SSL is launching a new console in the form of the C10. There's a preview of that product on page 20 of this issue. Also, UK-based Audio Pros is bringing the Sonodyne monitor range to the show (see Recording News).

DPA Microphones is bringing a new package for mobile recordists with the DPA 4017-R – the 4017 shotgun complete with Rycote accessories, including the Windshield 2, a fur Windjammer, suspension mount, and XLR holder.

HHB will have its usual spot in Hall 8, and will be showing new products from Wohler (see above right), Soundfield (the UPM-1 processor), the Roland M-48/S-4000D personal monitoring system, a new version of its CDR-882 DualBurn CD recorder, the UDP-89 (see page 24), and a large selection of Flash recorders from various manufacturers, including its own FlashMic range.

IBC
www.ibc.org

NEW PRODUCT
Wohler Technologies

Wohler Technologies has annouced that the company's AMP1-16-3G and Dolby E-capable and Dolby Digital Plus ready AMP1-E16-3G 16-channel multi-rate audio monitors, equipped with OLED (organic light emitting diode) screen technology, are now shipping.

www.wohler.com

NEW PRODUCT
DK Technologies

DK-Technologies is showing a new graphical loudness display at IBC that complies with ITU 1770/71 and makes comparisons of previous changes easier to see. In addition you can see its new 'Nebula' display for showing effective audio centre, designed for use with DK's StarFish/ JellyFish 5.1 metering system.

www.dk-technologies.com

NEW PRODUCT
Sound Devices

Sound Devices has announced that the new CL-2 Remote Fader for the 788T will be shipping as from IBC. The CL-2 is a remote control and fader accessory for the 788T that can be used on a surface or strapped directly to a microphone boom pole, connected via the 788T's proprietary C.Link port.

www.sounddevices.com

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Because the latest developments in the evolution of the mc²66 are based on valuable feedback from audio engineers worldwide, we would very much like to thank: Jens, Rudi, Mathias, Otto, Koen, Xiaopei, Giuseppe, Tómas, Anna, Bernhard, Engelbert, Carsten, Mick, Salih, Zoltan, Matti, Ahmed, Dominik, Josef, Helmut, Reinhard, Kunitaka, Walter, Jochen, Edmund, Gerhard, Maria, Pascal, Risto, Felix, Georges, Alfred, Bruno, Seok Beom, Yong-Soo, Marko, Doug, Oldrich, Remco, Hubert, Askan, David, Hans-Joachim, Kang Hoon, Fritz, Marc, Karl-Heinz, Pekka, Rolf, Sylvia, Franz, Gregor, Alexander, Claudia, Abdelaziz, Jerzy, Keith, Marianna, Nils, Steffen, Patrik, Erik, Taniguchi, Willi, Rudolf, Simon, Thomas, Bardo, Ernst, Anthony, Dieter, Jean-Paul, Edgar, Igor, Bertold, Gottfried, Jan-Eike, Harald, Kazuyuki, Martin, Johannes, Björn, Craig, Anton, Frank, Gábor, Yong-Seok, Stefano, Ties-Christian, Ullrich, Jacob, Christoph, Gaëtan, Flip, Hans-Reinhold, Eckhard, Albrecht, Bettina, Eddy, Juha, Hideto, Wilfried, Petra, Zhang, Steve, Jean-Philippe, Stefan, Ralf, Michele, Susumu, Riikka, Yvonne, Vinnie, Mats, Yutaka, Anders, Clemens, Eighsyn, Georg, Janusz, Karin, Gerold, Topaciuk, Daniel, Curt, Jan, Andreas, Dirk, Lars-Göran, Calvin, Joachim, Maximilian, Mark, Sascha, Werner, Yinong, Laurent, Tsuyoshi, Kay, Jeroen, Mario, Robin, Max, Roman, Ken, Daisuke, André, Burkhard, Axel, Bob, Oliver, Takeo, Jürgen, Maciej, György, Hermann, Rainer, Stephan, Wolfgang, Hans, Jörg, Alwin, Chen Chen, Gernot, Helge, Ben, Martin, Rüdiger, Per, Shinji, Winfried, Klaus, Christian, Markus, Volker, Erich, Kari, Friedemann, Alois, Peter, Rolf-Rüdiger, Yuri, Olaf, Horst, Jose, Matthias, Dietmar, Hans-Herrmann, Emil, Ole, Ulla, Ladislav, Ingbert, Tobias, Guido, Ian, Bernd, Michael, Udo, Johann, Ulrich, Reiner, Seppo, Jay, Dennis, Barry, Fredrik, Kojiro, Paulo, Elke, Thierry, Manfred, Erinn, Gerd, Hans-Jürgen, Tim, Raymond, Monika, Koos, Jorge, Reinhold, Norbert, Ryan, Manolo, Uwe, Bart, Tom, Herbert, Fred, Heike, Marcus, Richard, Luigi, Philipp, Toon, Claudio, Karl, Friedrich, Ichirou, Roger, Antonio, Gerald, Bruce, Miran, Robert, Greg, Erwin, Günter, Ralph, Alessandro, Ludwig, Huub, Tony, Manuel, Carlos, Eric, Olav, Heinz, Francis, Sven, Istvan, Wilhelm, Benjamin.

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Luxury Recording at El Cortijo in Andalucia

Musician Trevor Morais' Spanish recording studio has recently undergone major refurbishment, and bookings and management are now handled by the ever-expanding UK-based Miloco goup. JIM EVANS reports.

Located in the stunning surrounds of the Ronda National Park in Andalucia, El Cortijo has been designed and constructed with total comfort in mind and offers clients a fully secure and idyllic environment to work and relax in. At the heart of the villa, the recording studio boasts an expansive collection of gear, plus a variety of live rooms.

The studio's large and airy control room looks out over the mountains and beyond to the Mediterranean. The room is based around a Trident Vector console, chosen for its very open sounding mic amps, classic trident 'musical' EQ, and pure signal path. In order to maintain ultimate flexibility, most racks and equipment are wheeled and extendable to accommodate any amount of additional equipment being brought in.

To the right of the control room through two sets of double sliding doors is the main recording area. The largest room is split into two with a dividing wall and screens, or can just be left open as one big space if preferred. The room has been built with "an emphasis on achieving great acoustics", and Trevor Morais has designed one end of the live space for the specific purpose of "realising a fantastic drum sound". There are two large sound locks between the control and live rooms. The layout of all the recording areas has been designed to maintain visibility throughout the studio. To the front of the control room is the main vocal booth.

The studio comes with a fully loaded HD3 Pro Tools rig with 24 outputs and plenty of plins. For those wishing to stick to analogue recording there is a 24-track Studer A820 with Dolby SR. The outboard racks feature a good selection of vintage compressors and EQs, plus all the usual gates and modern effects processors. There is a comprehensive microphone selection.

Available backline includes a drumkit, Ampeg B15 Portaflex, Fender twin, Marshall head and cab, and a selection of keyboards.

"Closely working in association with FX rentals in the UK, we are able to hire any piece of equipment you require, usually delivered within 24 hours. With the help of FX, we have also hand-picked a variety of custom-selected racks that can be hired at special rates," says Miloco. The studio also has a resident maintenance engineer who is available to give 24 hour technical support, as well as assisting in setting up at the session's start, if required.

The living areas are not only luxurious and expansive, but plentiful too, and spread across the many different levels of the villa. Occupying much of the ground floor are the dining room and upstairs lounge. These share one of several balconies providing spectacular views of the surrounding area, and the lounge leads on to a mezzanine gallery overlooking the Salon based on the lower-ground floor of the house, and reached via a spiral staircase.

The Salon boasts a stunning seven metre high timber decorated ceiling, many comfortable sofas, and a magnificent fireplace. A covered terrace overlooks the picturesque gardens and swimming pool.

This immense villa is immersed in characteristic features that help realise the unique balance between modern-day luxuries and the historical cultures of Southern Spain. The architectural design and intricate details throughout the villa are amazing – as are the antiques and paintings collected by Trevor Morais over the years.

MEDIA MATTERS

Broadcasting in Spain has witnessed a spectacular expansion in recent years with the emergence of new commercial operators and the launch of digital services.

The cable and satellite TV markets are growing steadily and a free-to-air digital terrestrial TV (DTT) service was re-launched in late 2005. Spain aims to switch off the analogue TV signal by 2010.

Home-produced dramas, reality shows, and long-running 'telenovelas' are staple fare on primetime TV.

Public radio and TV are run by RadioTelevision Espanola (RTVE), which is funded by advertising and state subsidies. As well as public and commercial national TV networks, there are 13 regional stations backed by regional governments and many local stations.

Multi-channel TV is offered by the satellite platform Digital Plus.

VITAL STATISTICS

FULL NAME	Kingdom of Spain
POPULATION	44.6 million (UN 2008))
CAPITAL	Madrid
AREA	505,988 km2 (195,363 miles2
MAJOR LANGUAGES	Spanish (Castilian), Catalan and its variant Valencian, Gallego (Galician), Euskera (Basque)
MONETARY UNIT	1 euro = 100 cents
MAIN EXPORTS	Transport equipment, agricultural products
GNI PER CAPITA	US $29,450 (World Bank, 2007)
INTERNET DOMAIN	.es (.cat for Catalonia)
INTERNATIONAL DIALLING CODE	+34

New Spanish role for Rivera at Yamaha

MADRID – Yamaha has appointed Manuel Rivera to the position of Commercial Audio Manager at its Iberia office, based in Madrid.

After a long career as an engineer in the Spanish professional audio industry, Rivera joined Yamaha in 2003 as head of the service department in Madrid. There he was tasked with carrying out a major restructuring, making significant improvements to customer service levels.

"This is a time when the new, closer Europe requires new and innovative approaches to business," says Rivera. "In my new role I am determined that we will work hard as a team to enhance Yamaha's industry leadership in the Spanish and Portuguese professional audio markets."

"Manuel brings a fresh and dynamic leadership to our operations in Iberia," adds Nick Cook, European Marketing Director for Yamaha Commercial Audio. "His product skills have benefitted Yamaha and our regional customers greatly over the past six years. His promotion is well deserved, and I am certain he will make a significant contribution to maintaining Yamaha's position at the leading edge of the pro audio industry in the region."

Desfase Puts Faith in Cohedra

CORDOBA – Desfase Sonido e Illuminicatión is a pro audio rental company located in Albendín, Cordoba in Andalusia, Spain. Desfase's's main business is made up of rock, pop, and flamenco shows. The company has provided sound reinforcement for the Festival Fiestas del Vino in Valdepeñas, Cuidad Real, which was attended by an audience of 20,000, as well as for the Layenda Tour 2007, La Madre Que Los Parió Tour 2008, and the Córdoba Blues Festival and many other events and tours.

Last year, Desfase owners Francisco José Morales Martín and Julio Santiago García attended an HK Audio Cohedra training seminar at HK Audio company headquarters in St. Wendel, at which they were so impressed with the system that shortly thereafter they invested in a 2x8 HK Cohedra Line Array made up of 16 CDR 208 mid/high units and an equal number of CDR 210 2x10" subs as well as two PR 16 system power racks with VX 2400 power amplifiers and HK Audio Digital Controlling.

Merida Exhibition Venue Chooses Bosch

MERIDA – The capital of the Extremadura region of Spain, Merida features some of the best preserved Roman ruins in Europe and a spectacular new exhibition centre – the Merida Exhibition Venue (Instituto Ferial de Mérida – IFEME). The centre includes many old converted buildings with special characteristics. When it came to installing a sound system, the choice of the operators was the Praesideo Voice Evacuation and Public Address System from Bosch.

Bosch engineers provided individual acoustic solutions for the different halls bearing in mind the special architecture of each of them and the wide coverage required. This included the new Hemi-directional loudspeakers from Bosch with high quality sound, which are especially well suited for the high ceilings in the Merida exhibition halls. IFEME is, in fact, the first site in the world to have a state-of-the-art sound system of this type.

EAW on Parade for Pride 09

BARCELONA – Multi-media/audio provider Focus, S.A. was recently contracted to furnish sound reinforcement for *Pride Barcelona 09,* a huge GLBT event attended by an estimated 15,000 people. The event was held 28 June at Avenida Maria Cristina in Barcelona. Focus turned to EAW for loudspeakers and processors for the night's main stage concert, which featured several live musical artists and DJs performing well into the early hours of the morning.

The main P.A. system consisted of 16 EAW KF760 Line Array Modules (eight on each side of the stage), eight EAW KF730 Compact Line Array Modules (four on each side), and 16 EAW SB1000z Large Format Subwoofers, all processed by EAW UX8800 Digital Signal Processors.

Onstage sound for the bands was accomplished with eight EAW JFX260i Compact Full-Range Loudspeakers, and for stage monitoring for the DJs, FOCUS used two side-fills formed by one EAW SB730 Compact Line Array Subwoofer and two JFX260i modules per side. All components were amplified by Lab.gruppen FP Series amplifiers, and FOCUS used Smaart Live 5.4 for the adjustment and alignment of the system.

Pepe Ferrer of Focus, S.A., stated: "We are big supporters of EAW's products and technological innovations. For this event, we were particularly delighted that the UX8800 gave us access to EAW's proprietary Gunness Focusing Technology. That allowed us to phase all of the EAW speakers in very specific ways, giving us the possibility of multiple configurations."

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Moving In The Future

KEVIN HILTON talks to Matthew Postgate about the BBC's development department's move to Centre House.

There are plenty of institutions that are identified by where they are based, either the geographical area or the building that houses them. Scotland Yard is a synonym for the Criminal Investigation Department of the Metropolitan Police, even though the offices have been moved twice and since 1967 have been at New Scotland Yard in Westminster. So the research and development department of the BBC may still be referred to as Kingswood Warren after January 2010, when it leaves the grand house in the Surrey countryside that has been home for over 60 years and in January moves into a new building opposite Television Centre in West London.

Centre House does not convey the same image of seclusion as Kingswood Warren, where, so the stereotype would have it, bearded men in glasses and cardigans tinkered away in rarefied surroundings. NICAM stereo, Ceefax, widescreen, DAB, RDS, Dirac compression to carry HD signals over SD circuits, and more came out of the labs there, and although more innovation is certain, there is the sense that a significant chapter in technology history has ended.

The head of the department does not dismiss the past but views this as progress, with research going on closer to those who will ultimately use its results. Matthew Postgate became Controller, BBC Research and Development in October 2008, and says the work he oversees has to be placed within the wider context of the BBC to increase its impact and quality. "You could have the same number of research engineers, about 120, in an office somewhere but what counts is linking that work with the production community in the BBC," he explains. "The mass of the corporate function amplifies and directs the research."

Matthew Postgate, Controller, BBC Research and Development.

Kingswood Warren was among the few buildings owned outright by the BBC and has been sold to property developer Octagon for an undisclosed sum. Some members of R&D staff were unhappy about the move and protest strikes were threatened last year. At a time when the BBC has sold off technology divisions to concentrate resources on programme making and re-shaped its remaining facilities operations, there was concern that research would be reduced.

"I think it's more important and essential that the BBC has an R&D function these days," Postgate responds. "The BBC has always been an engineering organisation as well as an editorial one, and having both of those working in a complementary way is part of its power."

Postgate says he took the job after his now boss, Erik Huggers, Director, BBC Future Media and Technology, made clear his belief that having an R&D function within the BBC's engineering department was very important. "Right now we're seeing rapid evolution in technology along a number of different fronts but also those different fronts coming together, which makes the actual step we're facing bigger than normal," Postgate observes.

In these budget sensitive times even R&D has had to adapt and now some research projects are instigated to help save money as much as to innovate. "You look at HD," explains Postgate. "For several years the role of R&D was to move the technology into the market, which took 20 years, but now it's in the mainstream you create a different challenge for the BBC in the cost of production, so now a lot of our projects look at how you can manage those costs the move has been made to HD."

Before joining the BBC in 2003, Postgate worked for a digital consultancy and as a director of an Internet infrastructure company. He became Controller of BBC Mobile in May 2007 and re-launched the service, supervising the transition of the iPlayer to iPhone, iPod Touch, and Nokia N96. Postgate says BBC R&D now works in the same arena as the research departments of Google, NDS, and Yahoo, not just other major broadcasters. "Our world is increasingly international and covers more than traditional broadcasting technologies," he says. "As an R&D department we need to know how we fit into that world rather than just the world of 20 years ago."

There are companies, notably Apple, which still favour a closed approach to R&D. Because of the way it is governed, the BBC tends towards an open approach, which Postgate prefers because it is more productive, for the UK as a whole as much as the broadcasting sector. "The BBC needs to understand which areas it can bring the most impact to, which part of the problem we're best at solving, and who else we need to be working with to solve other problems," he comments. The Corporation is currently working with broadcasters such as NHK and industrial/commercial partners like Siemens.

The recent Digital Britain Report laid out the UK government's vision for future communications based on IP delivery, which BBC R&D is looking into, as well as other 'newer technologies'. The future of broadcasting, as Postgate sees it, is based on a combination of telecom, new media, and traditional broadcast technologies. "With the vast number of technologies it's about how one complements another," he says. "We need to understand that we're inevitably going to end up with a networked hybrid in the future, certainly the near future, and we need to understand how that mixture of distribution technologies can be used to have the most effect."

During IBC Erik Huggers will address whether traditional broadcasters are an endangered species and if there are still opportunities for organisations like the BBC. On the show floor BBC R&D is to demonstrate the 3D4YOU project, established to implement practical 3D television. The impetus may be more pragmatic these days but such developments have still come from an engineer sitting in a room thinking.

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Duetting With Genius

Ray Charles' final collaboration, *Genius Loves Company*, stands as a genre-defying testament to over 60 years of musical genius. MOJO WORKING talks to Al Schmitt, the genius on the other side of the mixing desk.

Genius Loves Company, the final album recorded by Ray Charles, released posthumously on August 31, 2004, less than three months after his death, now stands as a monumental tribute to a man whose musical genre-defying career spanned six decades. Formally taught to play classical piano as a child, Brother Ray, as he was also known, slipped effortlessly between jazz, blues, country and western, gospel, R&B, soul, and pop, as exemplified by the artists with whom he performed duets on this final project: Norah Jones, James Taylor, Diana Krall, Elton John, Natalie Cole, Bonnie Raitt, Willie Nelson, Michael McDonald, B.B. King, Gladys Knight, Johnny Mathis, and Van Morrison.

Al Schmitt mixed the 5.1-surround release as well as the stereo version of the album, and also engineered some overdubs, subsequently picking up five Grammy Awards as a result of his involvement with the project. Schmitt, who has won 17 Grammy Awards – coincidentally, the same number as Charles – plus two Latin Grammys and a prestigious Recording Academy Trustees Award, first worked with the legendary musician in 1961. "I did an album with Ray Charles and Betty Carter," he recalls, "We did it all live and I think the whole album took seven and a half hours; it was all mono, two-track. Then I also did part of *Modern Sounds in Country & Western Music, Vol. 2*. So I go back with Ray a long time."

Here We Go Again

When Schmitt reintroduced himself at the beginning of the *Genius Loves Company* project, which began tracking in mid-2003, Charles remembers of those early sessions, "Unfortunately he was really pretty sick and could only work a couple of hours at a time, then he'd have to go and lie down. But he was a hell of a trouper. He'd give it that one last shot and it would be great; he had such courage. He was an amazing man, the ultimate professional."

Genius Loves Company was recorded at various locations, including Charles' own facility in Los Angeles as well as Henson (formerly A&M) Studios and Capitol Studios. Additional engineers involved included Robert Fernandez, John Harris, Pete Karam, Joel Moss, Seth Presant, and Ed Thacker, plus Terry Howard, a long-time engineer at Charles' studio who was also credited as a Producer and Mixer. John Burk, Don Mizell, Phil Ramone, and Herbert Waltl were credited as producers.

Charles often sang live with the musicians, says Schmitt, and recorded his vocals live with Elton John on Bernie Taupin's *Sorry Seems to be the Hardest Word* at Henson Studios in Hollywood. "When Ray did that take everybody had tears in their eyes," he says.

Heaven Help Us All

But although Charles was ailing and frail as a result of the advanced liver disease with which he had been diagnosed, "Everybody was intimidated by him; he could be a tough son of a bitch," he reports. That included Diana Krall, with whom Schmitt has worked extensively: "She was really nervous but it worked out great. Maybe Elton John was not so intimidated, but everybody else seemed to be, including the producers."

According to Schmitt, Producer Phil Ramone had some obstacles to overcome when tracking at Charles' studio. "He had all kinds of trouble. It was just a nightmare," he reveals.

In *Making Records*, the autobiography that Ramone wrote with Charles Granta, he notes that the studio was largely unchanged since Charles opened it in 1964. Getting the sound under control was a challenge, he writes: "One of the first things I discovered was that the drum sounds were uncontrollable, so I sent out for a big, old-fashioned beach umbrella, lined it with acoustic foam, and positioned it directly over the drums. I also put some small screens around the front of the drum kit to keep leakage to a minimum. These things helped cut down on the reflection, and gave the drum sound better definition."

Schmitt continues, "It was not an easy project to do. Ray, not feeling well, didn't want to leave the office, which was right by the studio. It was tough to convince him it would be a much better record if it was done elsewhere."

Mixing also initially got off to a shaky start. "We started trying to mix at Ray's. I worked one day and said I couldn't. Ray's gear just wasn't kept up to date very well. There was a lot of noise, and things weren't working; I couldn't get the pan pots to work right. I said, we can do it here but it's going to take three times as long. So we got some time at Capitol and it worked out great."

Schmitt was much more comfortable at Capitol, a facility with which he has long been associated, and quickly got down to mixing the album. "And we were able to use the live chambers at Capitol, which made it that much more special," he notes. "It had been recorded to tape and we mixed it down to tape – I mixed the stereo down to half-inch and the surround we mixed down to eight-track two-inch."

Charles took a keen interest in everything, despite his frailty, says Schmitt. "I'd make a copy of the mix and take it to him and play it for him. Most of the time he loved everything, but once in a while he'd say, 'Maybe we could have a little more guitar here,' or something. But even when I was at his studio trying to mix, he'd come in then he'd have to go back to take a nap. It was really painful to see him like that."

As for the surround mix, he continues, "I spread it out and, in the center, I moved Ray a little to the left and all the guest artists a little to the right. It was like they were standing next to one another. That worked out really well; there was so much depth and clarity."

It Was A Very Good Year

Buoyed by public and industry sentiment following his passing, *Genius Loves Company* garnered Charles ten Grammy Award nominations. "The first Grammy that came up was for Surround Sound Album and I won that," Schmitt recollects. "Then Best Engineered Album came up and we won that. I turned to [Producer] John Burk and said, you're going to clean sweep this time." The album went on to won eight awards, including Record of the Year and Album of the Year.

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STEPHEN BENNETT talks to Dan Duffel from SSL about the company's new broadcast console.

SSL C10 HD

Compact Broadcast Console

Oxford-based Solid State Logic's (SSL) range of mixing consoles is well respected in the audio recording field, but the company has also been manufacturing broadcast consoles for over thirty years. Supplying mainly to the higher end markets, SSL's consoles have made inroads to all areas, and its C100 HD system is an assignable fully scalable console that meets the exacting specifications for high-end broadcast and visual media producers. "It's used in sport and high end entertainment around the world," says Dan Duffell, SSL's Head of Marketing. "Through the decades, SSL has been involved in the development of some of the key technologies used throughout broadcasting, such as MADI and assignable control surfaces." The C10 HD is a new product, first previewed at NAB in 2009. "Its based on the same core technology and software of the C100 HD, which has been in use for a number of years now and has proved itself in a broad range of broadcast applications," says Duffell. "The C10 HD takes that technology and presents it with what we call an 'intelligently simplified' user interface. The console is designed for small to mid scale broadcast applications and one of the things that quickly became apparent to us was that, in this area, the console is going to be used by a range of operators with a broad spectrum of skill levels." SSL's main challenge was to find a way to help those people produce the professional results expected from someone with access to a SSL console. "It has all of the usual things you would expect from SSL; robustness, reliability, high audio and build quality, and our support network," says Duffell. "It's designed to address the challenges of the mid range broadcasters at a practical level."

Simple And Shallow

The C10 HD has a simple 5.1 upmix algorithm that will take any stereo content and automatically create a very convincing 5.1 mix. "It provides a certain level of control so you can change stereo width and front back image," says Duffell. "An administrator can easily create an Upmix Preset which can then be applied by an operator." Presets are a significant aspect of the console; the console's Feature match facility allows a system administrator with control over every aspect of the system to create presets that can be recalled by users and run or edited depending on their level of access. "There's also a locked mode which is designed primarily to be used with Production Automation Sysytems – it's another key element of the console and is important to broadcasters who want to equip themselves for the future," says Duffell.

The C10 HD is based on SSL's propriety Blackrock processing core "It's convection cooled and a dramatic reduction in size, so we can build the core and MADI I/O right into the control surface – which means it's compact and quiet and cost effective," says Duffell. "Its an awful lot of power crammed into a small space!" Another innovation is the use of icons ('Eyeconics'), which use a thumbnail image in the channel info display to present an instant visual recognition of what the channel source is – which also has advantages from a Multilanguage perspective. In modern news production live contributions can arrive from many different and remote locations, which increases the complexity of communication and cue feeds. The C10 HD simplifies both the generation and management of multiple cue feeds with a 'one-touch Mix Minus' feature, and the console's 16 Mix Minus buses are accessed directly from dedicated buttons on each channel strip.

Making A Better Wheel

"A lot of the innovation in the console is about ergonomics. It's not about reinventing the wheel – it's about making better wheels. We worked very hard on the user interface and while some of the innovations may seem obvious, they aren't always implemented. For example, the C10 HD has a contextual help system – very common in software but not necessarily used to in a broadcast console," says Duffell. Another 'killer app' for use in local news, talk show, and magazine productions is the C10's integrated Dialogue Automix option, which ensures that only relevant channels are open when contributors are speaking. The Dialog Automix software maintains the overall gain of the system to avoid audible 'pumping' of background noise, or unwanted colouration of the mix caused by leaving all audio channels open. "It removes the need to have ten fingers on a console and usually requires a level of skill and practice that may not be available to a mid level broadcaster," says Duffell. "You configure the system, set up the relative levels of the microphones, and it takes it from there. It detects which microphones are active and opens and closes channels for you. It achieves two things; a consistent level of background noise, and avoids missed upcuts."

Making Friends

SSL has brought its sound quality and experience in the industry to a new range of broadcasters with the C10 HD. In an area with tight budgets and a varied skill level of operators, the console's ease of use, automation, and preset-based system means that its latest console should find a lot of friends in the target market.

INFORMATION

£ Priced from GB£54,000

Ⓐ Solid State Logic, 25 Spring Hill Road, Begbroke, Oxford, OX5 1RU, UK
Ⓣ +44 (0) 1865 842300
Ⓕ +44 (0) 1865 842118
Ⓦ www.solid-state-logic.com
Ⓔ sales@solidstatelogic.com

THE REVIEWER

STEPHEN BENNETT has been involved in music production for over 25 years. Now based in Norwich he splits his time between writing books and articles on music technology, running his own Chaos studios and working in the Electroacoustic Studios in the School of Music at the University of East Anglia. He's also a filmmaker with several music videos and short films to his credit. www.stephenjamesbennett.co.uk

Documentary program maker Guòmundur Gunnarsson recording interviews for Icelandic National Broadcasting.

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ADAM S3X-H

Three-Way Reference Monitors

SIMON ALLEN finds out if the S3Xs are simply developments of the S3A, or something wholly new and exciting.

As the successor of the world famous S3A that can be found in many high level studios across the globe, this is not just an upgrade but a complete reinvention. All sound elements from the speakers to the electronics have had a careful inspection and like others, I have been really looking forward to hearing the results. The S Series has and always will be a leader in studio monitoring, so the SX Series has got to deliver something extra and carry on the legacy.

Overview

The review model I was sent was the S3X-H, a horizontal (H) mounting unit with dual woofers. The vertical units in the SX series have single woofers. The first thing you notice about the X-H model is the new 4-inch mid-range cone making this now a three-way monitor. I always felt the S3A produced plenty of middle, so was very interested to see this development. Whilst setting up the S3Xs along side a current pair of S3As, I went looking for a speaker A and speaker B to match the S3As, but now the two 7-inch woofers cover the same frequency range and therefore transmit symmetrically. This also now makes it easier for a multi-speaker arrangement to be set up.

The design is in keeping with the S3A but with a fresher approach. The units are slightly larger, have more modern lines, and a different front panel layout. Extra functionality has been given to the front control panel. There are now two gain levels, a coarse and a fine tune to allow monitor level between different monitors to be set accurately. The EQ section has been given four controls, the first being a bass boost at 80Hz. The second is a shelf filter to mange the frequencies below 150Hz. At the top end there is a high frequency volume from -2dB to +2dB and a high shelf filter for frequencies above 6kHz.

The hexa-cones for the two woofers and the 4-inch mid-range driver are made from a honeycomb structure for strength and minimal weight, then coated in Kevlar which is a very strong and advanced material. This makes the cones much more efficient and more rigid than other types of cone. They can also withstand pressure much better and therefore resist deformation longer than other designs. Behind the cones the X model houses longer coils and larger magnets for a much better bass response.

The famous ART tweeter as used in ADAM's monitors has also undergone reconstruction in the X model providing 4dB higher efficiency and reproducing frequencies accurately all the way to 50kHz, which has made such a difference. The ART tweeter from ADAM has always been one of its strong points, but this new X-ART tweeter is a perfect balance in what is an excellent piece of craftsmanship.

A new optional extra for the S3X is a 24-bit/192kHz digital to analogue input. This can either be on AES/EBU or SPDIF connections with switchable R/L/Mono positions. Inside there is a new A/B amplifier with ultra low distortion, which delivers an ultra wide frequency response up to 300kHz.

In Use

After having placed the S3X-H alongside the other monitors in the studio including a pair of S3As, it took seconds whilst hearing the new X-model to realise how different these speakers were going to be. It was immediately obvious that these weren't a pair of S3As ▸

THE REVIEWER

SIMON ALLEN is a full time sound engineer and record producer. Previously studio manager at High Barn Studioes in Essex, he is now based at City Studios in Cyprus where he is Senior Engineer and heads up the new music studio.

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The vertical version – S3X-V.

that had been tweaked, but a completely different unit.

I have always enjoyed the S3As, finding them very comfortable to work on for many hours at a time, and knew how they would show up some grey areas on mixes before they left the studio. However, we sometimes had a problem trying to bring them in line with our Genelec 1025 main monitors and NS-10s. The new S3X-H fell into that gap comfortably.

When comparing the new S3Xs to the S3As, the first thing that jumps to mind is how they make the S3As sound boxy. This must be very surprising to anyone that knows the S3A, as they weren't known for this. The new model has taken what the S3A delivered so well and opened it up further. I believe that this is down to the three-way set up and dual woofers handling the same frequency range. The mid-range 4-inch cone hasn't just provided extra clarity in that important frequency band of music production, but taken some of the responsibility away from both the woofer and the tweeter. The tweeter isn't compromised by some high-mids, and now it also has a response up to 50kHz it makes the clarity even wider.

"When comparing the new S3Xs to the S3As, the first thing that jumps to mind is how they make the S3As sound boxy. This must be very surprising to anyone that knows the S3A, as they weren't known for this. The new model has taken what the S3A delivered so well and opened it up further."

Making An Impression

As well as the impression you get from the new X-model and the depth of clarity it is apparent that the sound radiates from the unit much better. There is a better feel from the listening sweet spot and right across the whole room. They project very well for a fairly standard size speaker.

I currently use an ADAM Sub12 with the S3As, but the S3X's bass response is very deep and tight due to the two woofers working symmetrically, so that it is very comfortable to work on them without the need of the Sub12. The X-model sounds very well rounded and shows up where the S3A was lacking. The amount of bass that is delivered is impressive but it's also how it appears in front of you that makes the new model sit so well.

Conclusion

The S3A is an amazing unit with some excellent technologies, and ADAM hasn't just built on this to give us the S3X, but has built something new and exciting with what it knows so well. The sound has been opened up in a whole new way that I believe consistently delivers more reliable results outside of your studio. These are reference monitors, and as they make their way into studios they will become part of the standard called 'music production'. The S3X radiates sound into the room with depth, accuracy, and clarity in the way you need it to be with comfort and ease. These are monitors that need to be heard.

INFORMATION

£ S3X-H GB£3,995.00 pair (inc.VAT)

Ⓐ ADAM Audio GmbH, Ederstr. 16, D-12059 Berlin, Germany
Ⓣ +49 30 863 0097 0
Ⓕ +49 30 863 0097 7
Ⓦ www.adam-audio.de
Ⓔ info@adam-audio.de

Ⓐ ADAM Audio UK Ltd., Hangar 2, North Weald Airfield, Epping, Essex, CM16 6AA
Ⓣ +44 (0) 1992 525670
Ⓔ uk-info@adam-audio.com

ALISTAIR MCGHEE is a sucker for the promise of 'more and more', so HHB's universal disc player provides a real treat for him.

I have five silver disc players in my life. At work an Alesis Masterlink, a Fostex CR-500, and a Denon DN-C640. At home a Pioneer 656A and a Sony XE597. Every one of these I bought because it does a little more. So I should be a sucker for HHB's UDP-89, which promises more, more, and more. Hence 'U' for universal. But exactly how more is more? Well the 89 will play CD, CD-R, CD-RW, CD-Video, SACD, DVD-Video, DVD-Audio, DVD-R, DVD+R, DVD-RW, DVD+RW, and compressed audio (compressed in a really, really popular format) and MPEG4 .avi video files can also be taken for a spin.

HHB UDP 89

Professional Universal DVD/CD Player

Before we ring the bells and blow the whistles it's worth thinking about the raison d'etre of the UDP. The question of being a player, in a computer world where all our players are recorders and now we're kind of used to all-encompassing functionality. For instance, the Fostex is a recorder that also plays – those ten hot start keys and a big screen (the Fostex is a 2U machine) tempt some engineers to despise the more orthodox Denon. But the HHB has the high definition audio formats and DVD playback, so it sets itself apart from mere CD players. I want to play all high definition audio formats – compressed playback is a bonus but not a 'more' I really care about. But SACD and DVD-A are big plusses for me, even if neither has set the world alight nor likely will. Time to ring a bell.

Step one – take down from the shelf *O Brother, Where Art Thou?* - the pernickity SACD version – and slap it in the tray. The UDP is a 1U machine and hurray for that, but the tray feels a touch flimsy for being so slim I suppose. Step two – select track sixteen *I am a Man of Constant Sorrow.* Step three – strut round room mimicking the mighty Dan Tyminski, and marvel at a band that resists all temptation to increase the tempo by as much as a microsecond. It feels so good you can almost forgive country music its love affair with the stetson. SACD playback sounds good. Pop the CD – damn can't grab the disc across the tray – finger it out. Drop in the first CD from the pile, Joan Armatrading. The first thing I notice is an iron grip on the bottom end, the bass more tuneful than I've heard in a while. Probably just because I'm listening hard to a new bit of kit, but it's an impression that stayed with me over extended listening. Oh yes, and snares tighter than small business budgets in credit crunch Blighty. I think it's a dynamic thing. I won't gush but I really enjoyed listening to music on the UDP. And joy of joy – the headphone amp goes loud, say good bye to the phone, the doorbell, and jet engines overhead – but why is the 'o' at four o'clock?

Having spent my cash on SACD discs and players I never paid much attention to DVD-Audio, I thought one extra format enough. So how to test the DVD-A playback? Sequoia to the rescue, as version 10 of the omni-competent DAW can author and burn a simple DVD audio disc. I quickly ran up a compilation disc and the UDP played it without batting an eyelid. And then I thought, have I backed the wrong horse? I know they've both fallen, and the vet has put DVD-A out of its misery, but actually 4.7Gb space for uncompressed high resolution audio that you can burn on your very own PC is a jolly nice idea.

The UDP offers plenty of connectivity, stereo phonos, 5.1 on phonos, balanced stereo analogue on XLR, AES on XLR, spdif on optical and coax, and 5.1 and stereo analogue balanced on a DB25 connector. Something for everyone really. Control options include a nice broadcast friendly front panel, a standard remote, and also RS232 and parallel options. And as it is a DVD player, the video output carries are useful extra info if you have a spare screen or even just a spare input on a monitor.

Video output is equally well catered for with composite, component, and HDMI options available. I enjoyed a great comedy moment when I couldn't see anything on a video ouput as the machine had been set to an upscale resolution and I didn't have the manual to hand. Actually it was a reminder of how important having a pdf on the website is. Well done on that one HHB. Alongside DVD and Video CD playback, the 89 will also play MPEG type 1, 2, and 4 video embedded in mpg and .avi files. And this includes DivX and XviD files as long as they are DRM free.

The machine has NTSC support alongside PAL and that includes upscaling. I did wonder about a ubiquitous SCART socket, but to be honest there's nowhere to put one. But you can switch the component BNCs to RGB and with the right lead SCART away. As a sound man I'm not the best person to judge video quality, but the pictures look very nice to me. The UDP can upscale to 1080i and on my 16:9 Benq Leonardo and Cate appear pretty damn fine in *The Aviator*.

The HHB has a full surround implementation (Dolby Digital and DTS) including bass management, a pink noise generator, and individual volume and delay settings, all of which should ensure that the first 20 minutes of Saving Private Ryan will scare the crap out of the cat. One nice feature is the master volume control on the remote. This allows you to set the output gain directly on the player, so you could at a push connect the 89 directly to your power amps saving yourself a preamp and a heap of wires.

So is this the machine for you? Well if I can just niggle – the skip track function could be quicker, I don't like eject buttons underneath the tray, and CD track name info on the display is a must for radio. There's probably a more serious issue with the nature of 'Universal', the bumblebee in the ointment is Blu-ray. As a late adopter in video, I don't care but you might.

Conclusion

But I'm not going to get hung up on the ultimates and universals. This is a machine with high def audio formats, superb connectivity, excellent pro control options and features, and superb output quality. And it's not expensive. So if you need a professional player, 89 might just be your lucky number. Take it away Soggy Bottom Boys… *I am a man of constant sorrow…*

INFORMATION

£ **GB£776.25 (inc.VAT)**

Ⓐ **HHB Communications Ltd., 73-75 Scrubs Lane, London, NW10 6QU**
Ⓣ **+44 (0) 208 962 5000**
Ⓦ **www.hhb.co.uk**

THE REVIEWER

ALISTAIR MCGHEE began audio life in Hi-Fi before joining the BBC as an audio engineer. After ten years in radio and TV, he moved to production. When BBC Choice started, he pioneered personal digital production in television. Alistair is now Assistant Editor, BBC Radio Wales, but is allowed out occasionally.

XB 14

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RME HDSPE AIO

All-In-One PCIe Plug-In

ALISTAIR McGHEE has been one of those eagerly awaiting the arrival of RME's all-in-one card; but has it been worth the wait?

If you cruise across the forums you'll see that the RME AIO has been a much-anticipated product, which is strange in a way. You would think with USB2 (3 around the corner) and Firewire devices now in their second and third generations, that the idea of plugging a card into your computer would be ancient history. I understand the argument that PCI and now PCIe offer greater bandwidth, but to be honest, running out of bus bandwidth isn't a problem for most of us.

When you look around at Pro Tools on M-Box, SADiE on BB2, and a plethora of excellent interfaces (I have a Firewire Mackie and USB2 Marian to name but two), what gives with the unscrewing thing? And having all the cabling round the back might be the worst idea since MS-DOS 4. I want to plug things in and out, and I want to do it all the time round the front.

But, but, but… the answer of course is that cards you plug in are not at the mercy of wear and tear on crappy socketry, USB/Firewire chipset issues, or the other ailments of external serial buses. I know they should work, and I'm sure ten thousand *Audio Media* readers could well have trouble-free lives with external interfaces, but if one of my limbs depended on secure audio record/playback I'd plump for an RME PCIe card every time.

The last few RME cards I've reviewed have all been heavy hitters in the I/O department. 64 channels over MADI, 32 channels over ADAT, or 16 channels of AES. But what about more everyday requirements, what about a card for the rest of us? But what do the rest of us want? Well, we don't want to compromise on quality for a start, nor reliability and ease of installation. What we do want is flexibility and a handy selection of input and output formats that help us to plug in our audio world.

All I/O In One

After what some RME fans would describe as a long wait, RME has come good with the AIO. That's 'All in One' in case you're wondering – reminiscent of 'All in Wonder' video cards I thought, in case you care. The AIO is a PCIe card and offers balanced analogue on XLR, AES, and spdif outputs (separately addressable), and ADAT. All these will run up to192kHz, as will the independent headphone output. Top feature that. If you need more there's a choice of expanders, four channel balanced analogue in and or out, TDIF, and a timecode card.

One of the main attractions of the AIO is the balanced in and out, so when I was looking for something to compare it with I started with Marian's excellent Trace Pro which is a balanced card with less I/O than the RME, but sets a formidable standard in sound quality. I began with the AES outputs and settled down to listen. I couldn't hear any difference, both cards sounded great. Which is nice but hardly dramatic.

Then on to analogue, both the Marian and the RME offer balanced outputs, but RME doesn't include a balanced cable with its card out of the box, which I think is a real shame, as it's not the kind of thing you'd have in your cable drawer. I had to resort to the unbalanced analogue outputs available on the AIO. Again I sat down to listen and again I couldn't separate them.

What about latency, the bane of host based audio systems? In my now ageing dual core I managed to get both cards down low. On a simple eight track mix, both cards will get you well below the 20ms point, which is where your overdubs start to get a bit tricky. Or at least mine do. The RME drivers are very, very stable, and would deliver all the way down to 1ms latency. You should take these figures with a pinch of salt, or maybe a bucket. PCIe is reliable but I don't think anyone would claim that the figures on one PC are necessarily going to be deliverable on another machine. Try it first if it really matters to you.

Going sort of backwards, I should say something about the installation and the software. I've installed four different models of RME cards in several different PCs in the last couple of years, and I've never had a problem. The card comes with a standard mixer application that is really powerful, if a tad on the ugly side. The hidden treasure is DigiCheck. If you want to know, and I mean really know how high your peaks are, how much headroom you have left to bit level accuracy, this is the baby for you. It's all in the oversampling it seems, and we've been doing wrong for years. In fact so many years it's become a standard. But you don't have to put up with it any more. The AIO also has cool a spectrum analyser and jellyish vectorscope. Hey RME, what about some PPMs for us saddos?

Conclusion

So if you're not living in laptop world or wedded to the external box over USB, then this RME card should be high on your shopping list. Get the cable for balanced operation and enjoy a terrific piece of audio engineering. In fact, hang the DigiCheck across your digital output and it will save your overloaded bacon not to mention your phase reversed arse. Talking of which, can I have a phase reverse function in the mixer please? Just in case you understand… AM

INFORMATION

£ **GB£479.00 (inc.VAT)**

Ⓐ **Audio AG, Am Pfanderling 60, 85778 Haimhausen, Germany**
Ⓦ **www.rme-audio.de**
Ⓔ **support@rme-audio.de**

Ⓐ **UK Distributor: Synthax Audio UK Ltd., Unit 61, The Wenta Business Centre, Colne Way, Watford, Herts, WD24 7ND**
Ⓣ **+44 (0) 1923 693756**
Ⓕ **+44 (0) 1923 693757**
Ⓦ **www.synthax.co.uk**
Ⓔ **support.uk@synthax.eu**

THE REVIEWER

ALISTAIR MCGHEE began audio life in Hi-Fi before joining the BBC as an audio engineer. After ten years in radio and TV, he moved to production. When BBC Choice started, he pioneered personal digital production in television. Alistair is now Assistant Editor, BBC Radio Wales, but is allowed out occasionally.

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ZPLANE ELASTIQUE

Real-time Pitch Shifting Plug-in

So very simple and hassle-free to use, says SIMON TILLBROOK of zplane's pitch shifting tool.

My familiarity with my latest product for review was somewhat greater than I initially thought. zplane.development is a research focused company founded in January 2000 in Berlin, providing processing/analysis technology to the music industry, and its real-time pitch shifting engine has been employed in some of the most popular DAW applications in general use; such as Cubase 5, Ableton Live 8, and Sony Acid 7 to name but a few. zplane has now extended the possible user base for its phase coherent timbre preserving pitch correction with an RTAS version for Pro Tools 7.4 and above users that is called zplane Elastique Pitch.

Overview

Elastique does not need to go offline to analyse the audio and then apply the desired level of processing. This is all done in real time, and it is possible to pitch correct up to eight channels of audio simultaneously with sample rates from 32-192kHz.

The range of pitch variation that can be applied is +/-12 semitones (50 to 200%) and you can switch between these scales as you wish.

MIDI input is available for pitch control from an external controller of choice. There is no sustain employed here, so when a controller key is released the audio program returns to the original pitch. Timbre of your sound is maintained proportionally to the amount of pitch correction that is applied, and there are a number of preset format options to cover a variety of signal types from monophonic through to complete complex mixes, so maintaining the natural resonance and characteristic of the sound.

One area where Elastique is clearly aimed is post production, where there can be a need for pull up and down. The software has a number of presets and a detailed table covering the most used/popular options to save considerable time.

Interface

The graphic user interface for the plug-in is very straightforward indeed, a target-style main window with a vertical pitch slider to the left and horizontal timbre slider above. Below and to the right of these value sliders respectively are boxes illustrating the levels of processing either in semitones or percentages, as you choose.

An input source definition button allows selection of the appropriate dominant frequency region to maintain timbre during shift processing. The preset button accesses various predefined shift options, those principally for pull up and down.

The most significant button is in the top left corner of the GUI with the label 'Link'.

The default is for the pitch and timbre value sliders to be linked together, thus maintaining proportional shifting regardless of which slider is used. This represents the standard approach to pitch shift that most of us are used to using. Things become more interesting when you remove the link and can now move the pitch and timbre value sliders independently of each other.

The target display has a small ball within it that moves in response horizontally and vertically according to the movement of the two value sliders, or vice versa.

Increasing the overall size of the plug-in window gives you a finer degree of control over the movement of this and subsequent values.

Latency

With Elastique being a real time processing plug-in, the issue of latency was one of the first issues to pop into mind. zplane, clearly being aware of this, give very good general instructions and guidelines along with links to other instructional documents from DAW manufacturers. Those given for use with the RTAS version of Elastique for Pro Tools are clear and make for a very easy setup indeed.

Use

I used Elastique on a number of Pro Tools HD and LE systems, but for the bulk of the testing I used Pro Tools 8 on a 2.4gHz Macbook. I was interested to see how processor-intensive it would be, having initial feelings that a real time processing plug-in of this type would require quite a bit. I must say that not only was the CPU requirement pleasantly surprising, but also the smoothness of the processing, glitch free even with fairly wild use.

The ability to remove the Link button and control pitch and timbre separately is a real trump card for Elastique. I can see sound designers enjoying the simple ability to modify tonal characteristics and pitch independently to create subtle or more radical variants.

Musically, the sonic integrity of audio signals is maintained throughout the duration of an audio program when converting from one key to another. As previously mentioned the instruction with regard to dealing with latency was very clear, and setup was quick and accurate with no fuss.

Conclusion

Elastique was just so very simple and hassle free to use, getting great results when you felt you should be working a little harder to achieve such things.

It's is a great tool that would be a great addition to anybody's processor collection. The simplicity of use for such a processor is very refreshing and welcomed. The ability to separately manipulate pitch and timbre is the main attraction for many I suspect, and you will not be disappointed with what can be achieved.

INFORMATION

£ **GB£325.52 (inc.VAT)**

Ⓐ **zplane. development, Katzbachstr.21, D-10965 Berlin, Germany**
Ⓣ **+49 30 854 09 150**
Ⓕ **+49 30 854 09 155**
Ⓦ **www.zplane.de**
Ⓔ **info@zplane.de**

THE REVIEWER

SIMON TILLBROOK is the Principal Music Tutor at Islington Music Workshop in London. The rest of his time is spent as a freelance engineer, mainly in the USA.

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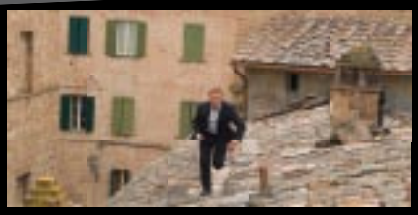
Reed Expositions

Conch Nominations Announced

It's almost time for the awards night, and nominations are in. AUDIO MEDIA rounds up the names to look out for this year, and talks to Steve Milne of Molinare and Stewart Harper of Evolutions about the hard work and passion that has led to their nominations.

'Celebrating the very best of audio talent in the UK' is what the Conch Awards is all about, and now in its fourth year of party poppers and streamers, on 22 September some of these names will ring out from the Kings Place in recognition of the hard work and talent the audio field has to offer.

The shortlists have been put together based on nominations from public online votes and peers across the industry, to provide a long list of noteworthy projects from 2009 across TV, film, and commercial sectors. The most popular nominations were compiled and approved by the committee for each category's shortlist (detailed below). Now, it's all down to Judging Day, the decision to award a prestigious Conch left in the mightily esteemed hands of the judging panel. So, until 22 Sept, the atmosphere will remain thick and crackling with suspense, and party poppers and streamers will need to be held in tensely anticipated check.



NOMINATION...

Best Foley Project – *Quantum Of Solace*

Sprinting across Siena rooftops is just one of the heroics Bond gets up to during Quantum Of Solace. For the Foley team this meant a trip to eBay, 50 not-quite-so-Tuscan tiles, and some lateral thinking…

Alex Joseph (Foley Supervisor): "The right thing would have been Tuscan tiles, but you can't justify smashing them – they have to be imported and you're not going to get that many of them."

Getting the sound of the tiles through the music track was going to be a problem as they are quite weak in the lower end… The solution was to multi-mic the tiles session and, of four tracks, two were pitched down.

Joseph: "Mark [Taylor] went with all of them, at different levels… You still get that transient sound, and then you actually get the meat of it from the pitched down stuff.

"We were throwing tiles down this roof we'd made up, but there was a point when we were doing footsteps that we decided, rather than running across tiles, it was better to strap tiles to my feet and do tile-on-tile running."

Cable ties were located, and the rest is a matter of imagination…

From an interview with Alex Joseph, Foley Supervisor on *Quantum Of Solace* (*Audio Media*, November 2008: *Final Cut Special*)

On Course For Success

One of those with his balloon pump at the ready is Stewart Harper, Dubbing Mixer at Evolutions, that has been nominated for a Conch for Best Audio on TV Entertainment. It is the third year that Evolutions has found itself nominated, a fact to which Stewart describes himself as 'delighted and kind of shocked'. But the recognition doesn't come without a lot of hard work being put in first. When asked about the challenges faced on *Top Gear*, Harper commented: "From our point of view, I think it's one of the toughest things that I've ever had to mix simply because the *Top Gear* staff and directors expect *Top Gear* to sound filmic, and that's the types of music they choose, and that's the way it's actually shot…" He continued, "I think the constant challenge of it is because there are so many loud aspects to it… we've constantly been trying to add much more dynamic to it… [adding] some quiet moments, and trying to get the loudness to sound loud. That's the main aim for us." – a task that Harper and team have obviously undertaken with success, as their peers have noted. He mused, "I think it's a great sounding show simply because there are great cars and great music… you've obviously got an opportunity to work with these great sounding Lamborghinis and Ferraris and Porsches, and obviously they do sound great, and the music that's chosen is great… I think that's what stands out."

Stewart Harper, Dubbing Mixer at Evolutions, nominated for Best Audio on TV Entertainment for Top Gear.

Harper pointed out that it is these types of opportunities available in the British production industry today that allow Evolutions and its ilk to produce note-worthy audio, claiming that great sound is "…really led by the quality of programmes that people are making", a fact which makes the British production industry a very good place to be at the moment. ▸

NOMINATION...

Production Sound Mixer of the Year – Chris Munro

"More and more directors hate ADR... Particularly Marc Forster, so most of the location dialogue was kept. On *Quantum Of Solace* we were faced with a possible actors' strike after production, so ADR might not have been possible anyway. I'd worked on *The Kite Runner* with Marc, and on that movie we had no way of getting the young lead actors to the UK or USA to re-record lines, so I rigged up a portable ADR system on location in China, which Marc really liked. We adopted this process on Bond as well, but our aim was always to get as much location dialogue as possible."

Chris Munro talking about his production sound work on *Quantum Of Solace* (*Audio Media*, November 2008: *Final Cut*)

NOMINATION...

Audio on TV Drama – *Doctor Who*

As I chatted to Julian Howarth about the nuts and bolts of recording location sound for *Doctor Who*, I thought it telling that the first thing he wanted to talk about was his crew. His very words: "I'm only as good as my team."
...The show relies heavily on radio mics, and at the beginning of every day, Bryn delivers a bucket full to the wardrobe department to be fitted into the exotic mix of costumes that makes up each episode...
...The booms are mostly fitted with Sennheiser MKH50s, and for outside work, or where a little more 'suck' is needed, Sennheiser 416s do the business...
...We talked about perspective, and Julian explained that with the 'B' camera often sneaking into ostensibly wide shots, everything has to be as tight as possible...
...I enjoyed a glimpse behind the veil, and it's great to see great TV being made by people passionate about getting it right – and the day reinforced the truth that the toys are nice, but it's the people that matter...

Excerpts from Alistair McGhee's article on the production workflow of *Doctor Who* and interview with Julian Howarth of Bang Post Production (also nominated in the Production Sound Mixer of the Year category) (*Audio Media*, July 2008: *Time And Place: On Location With Doctor Who*)

The Nomination Shortlists

TV Sound Person of the Year – Sponsored by Sadie
Chris Roberts, Ascent 142
Ben Norrington
Paul McFadden, Bang Post Production

Commercial of the Year – Sponsored by Film London
Formula One Launch promo, Hackenbacker
Sony 'Bond', Wave
Hovis 'Re-launch', Wave

TV Dubbing Mixer of the Year – Sponsored by Avid
Paul Cotterell, LipSync
Richard Ashley, Evolutions
Howard Bargroff
Chris Maclean, The Jungle Group

Audio on TV Entertainment – Sponsored by De Wolfe Music Ltd.
Top Gear, Evolutions
Red Dwarf: Back to Earth, Evolutions
MTV European Music Awards, Richmond Studios Productions

Best Foley project
Quantum of Solace
Man on Wire
Red Riding Trilogy

Film Soundtrack of the Year under £10m – Sponsored by Munro Acoustics
Slumdog Millionaire
Man on Wire
The Boy in Striped Pyjamas

Film Soundtrack of the Year Over £10m – Sponsored by UK Film Council
Quantum of Solace
Hellboy II
The Boat That Rocked

Audio on TV Drama – Sponsored by Whitemark
Red Riding 1980, LipSync
Doctor Who, Bang Post Production
Crooked House, Ascent 142
Law and Order UK, Pepper Post

Production Sound Mixer of the Year
Simon Hayes
Chris Munro
Julian Howarth, Bang Post Production

Film Sound Editor
Lisa McMahon
Claire Ellis
Glenn Freemantle
Eddy Joseph

Audio on TV/Film Documentary
Man on Wire, Molinare
Evolutions, Evolutions
The Animal's Guide to Survival, Halo Post

Film Re-Recording Mixer – Sponsored by Euphonix
Paul Cotterell, Lipsync
Mike Prestwood Smith
Ian Tapp, The Pinewood Studios Group
Richard Pryke, The Pinewood Studios Group
The shortlist for Commercial Facility, Film Facility, TV Facility and Newcomer will be announced following the judging day in September 2009.

NOMINATION...
TV Dubbing Mixer of the Year; Film Re-Recording Mixer – Paul Cotterell (LipSync Post)

"We all attended the spotting sessions. Often, an Effects or Dialogue Editor, or Supervising Sound Editor will sit with the Picture Editor and Director and work through the film, talking specifically about which sounds are needed and the intention of each scene. Fortunately, I was able to go along to those sessions as well, so I was party to all of those conversations, so we were very cohesive in that sense. I spent time with Antonia [Bates], looking at what she'd done, and she talked about what she intended. We cut down the time in the theatre because we had a cohesive plan of action."

Paul Cotterell talking about work on *Good* (*Audio Media*, June 2008: *A Good Challenge*)

NOMINATION...
Production Sound Mixer of the Year – Simon Hayes

Simon [Hayes] was brilliant and his team was such an asset in post, says Lewis [Tony Lewis, Music Editor]. "We sat him down and said 'this is what we want to achieve – so how do we do that?' Simon and his team basically moved heaven and earth to make things possible for us. For example, they organised the shifting of some huge generators by 200 meters, which involved lots of people and a massive crane working over the bank holiday weekend." To achieve this mammoth task of recording the singers as live as possible, Hayes decided not to use a 'thumper track', a low frequency beat to give the performers a cue and which can be EQ'd out, but rather to equip Pinewood's huge 007 stage with induction loops. "We went directly to the companies that produce these for theatres and cinemas, and had the performers wear 'earwigs', which are tiny hearing aids for monitoring," he says.

From an article about the audio production for *Mamma Mia* (Production Sound Mixer, Simon Hayes). (*Audio Media*, September 2008: *Final Cut*)

The Edge Of Opportunity

Man on Wire is just such an opportunity that you don't come across every day, but when it does happen along, is worth grabbing as something just a little bit different. Described as 'beautifully crafted' and 'immersively powerful' by Steve Milne, CEO of Molinare that has been multi-nominated for its work on the documentary film, the project has a touch of ethereal subtlety and nostalgia that is likewise vivid in Molinare's audio achievements. "Our challenge was to build a soundtrack that would evoke an era, while underpinnng the deeply-layered currents of feeling running through the film," said Milne, a task that proved to be "…the true definition of re-recording, bringing something to life that had been silent and forgotten for so long." As such, the film represented the height of documentary film-making, and so Molinare's contribution had to be equally 'outstanding', said Milne. To meet this high goal, passion was the key, a sentiment shared by Molinare towards audio's contribution to story-telling, along with enthusiasm and commitment that Milne said "…enboldened us in our audio capabilities." He said of Molinare's team, "We are working to enhance [the storytellers'] story, and not merely providing a technical service." – a principle that shines through in all of the audio work Molinare provided for the film.

Steve Milne, CEO Molinare, nominated for work on Man On Wire.

A nomination for Foley on Man on Wire is one of the awards for which Molinare is named this year. Small sound details were essential to recreating Philippe Petit's story: "He remembered details like the unique sound of the wire as it plunged into the void, and it was Molinare's challenge to evoke these memories through

NOMINATION...
Film Soundtrack of the Year Over £10m – *Quantum Of Solace*

...Eddy Joseph noted that Forster's main theme throughout has been to bring something of the 'independent film' to the mix, which may be more suited to the grittiness that Daniel Craig has contributed to the role.
With this in mind, Joseph explained that as Sound Supervisor, part of his responsibility was not only delivering on the Director's needs, but also acknowledging the public expectations of a Bond movie. Considering the time constraints involved, the strategy was to cover everything: be 100 percent prepared to mix a Bond movie, then look for 20 percent extra – the innovation required of the sound team by the Director. "This is still a Bond film," asserts Joseph. "People expect certain things from it. They expect the chase, the big themes, the big music. If you didn't have those then people would feel cheated. I had to think along those lines."

From an interview with *Quantum Of Solace* Sound Supervisor, Eddy Joseph (also nominated in the Film Sound Editor category) talking about work on *Quantum Of Solace* (*Audio Media* November 2008: *Final Cut Special*).

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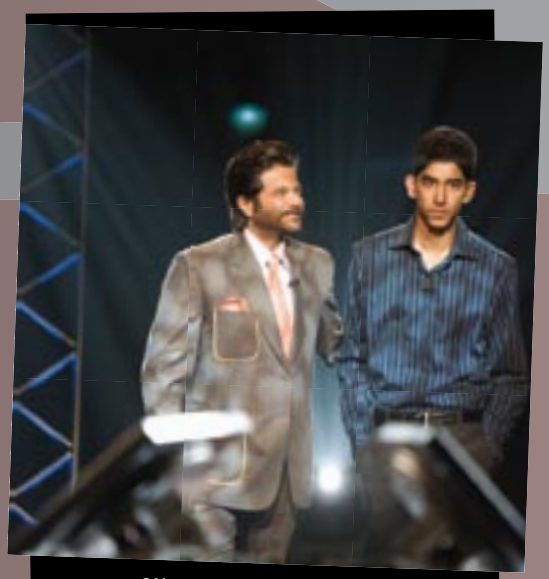
the use of Foley," said Milne, describing Foley on the project as critical in creating atmospheres of emptiness and the heightened tension of the heist, an achievement of which Molinare is justifiably proud.

Milne continued of Molinare's work on the film, also nominated for an overarching Conch award for Audio on a Documentary Film: "Although it was a very dramatic score that needed a lot of attention, it was important for us not to over-play the music, as it was vital to feel the images rather than over compensate with the music. We had to let the story breathe."

Winner of many awards in past months, including an Oscar for Best Documentary and a BAFTA for Outstanding British Film, Steve Milne is no less delighted for their multiple Conch nominations. "It was a truly groundbreaking, genre busting piece of work. It is terrific that the Conch nomination has recognised the contribution that the high quality soundtrack made, as so often the technical craft is overlooked."

This, at its core, is what the Conch Awards is all about – recognising and applauding the achievements of the British sound industry. It's one of the best ways of celebrating the successes and triumphs of an often under-recognised, but highly creditable and skilled aspect of film and TV production. AM



NOMINATION...
Film Soundtrack of the Year Under £10m - *Slumdog Millionaire*

... "*Slumdog* is 'sound design with emotion'." explains Freemantle. To achieve this level of intimacy, he and his team started from a stripped-down dialogue track and then re-built the atmosphere around it. "Doing it this way meant that we could add every bit of atmosphere back in again – but with complete control over its placement in the soundfield," he says.
"We ended up with thousands of little bits and pieces all patched together, and we collected material from everywhere – we even went through the rushes and outtakes to see if there was an interesting shout from someone, or a snippet with an unusual doppler'd car horn. We went to this place in Brighton that specialises in Indian cars and recorded all of those, while Gillian Dodders (Supervising Dialogue Editor) went out to Mumbai and spent several days recording atmos and crowd."

Glenn Freemantle (also nominated in the Film Sound Editor category), talking about work on *Slumdog Millionaire* (*Audio Media* March 2009, *Final Cut*).

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AMS-Neve Genesys

The time spent in developing and perfecting the Genesys has meant its entry into an already established marketplace; SIMON TILLBROOK sees how it fares against stiff competition.

It was back in 2007 that I first heard about the AMS-Neve entry into the compact analogue console market in the form of the AMS-Neve Genesys. Things went very quiet and, as other high-end console manufacturers released their products and refined them, the absence of the Genesys was felt more.

Since that early announcement, rather than rush a product through, AMS-Neve went into a near year-long process of redesigning and refining the Genesys, taking feedback on board from various industry quarters.

Now, in 2009, the console is ready to come into an established market up against some very stiff competition indeed. How does it fare?

General Description

The AMS-Neve Genesys is a hand built in-line digitally controlled analogue console with integrated DAW HUI control. The system starts with a 16-channel console that can be expanded up to 64 channels.

The 16-channel Genesys has a small footprint, being just 1090mm (42.9-inches) wide, 905.5mm (35.65-inches) deep, and weighing 75kg (165.36lbs), making it a portable proposition as well as a studio console system.

The standard supplied 16-channel package includes 16 channels of Neve mic/line amplifiers using the 88RS design and 16-channels of DAW monitoring along with four mono and two stereo auxiliary sends, and two dedicated cue mixes.

There are four stereo effects returns, eight group outputs and main stereo output with monitor speaker feeds for two stereo and two 5.1 systems.

A full talkback set-up, metering for all 16-channels, eight groups and stereo output are provided.

Options and Connections

There are numerous options when it comes to the AMS-Neve Genesys, as you would expect from a product designed to allow expansion as required.

There are two onboard computer options available to you. One comes as standard for general management and setup of the Genesys, the other gives you the possibility of a recall package for the console surface, and implementation of the Neve Encore Plus automation system. Connections for keyboard, mouse, and monitor are found on the rear of the Genesys, along with a USB socket (duplicated on the front) for using a USB Flash drive for data storage. As well as connections for an external pointing device, there is a touch pad on the operational surface of the Genesys.

There are no onboard hardware dynamics. Instead there are options for fitting hardware cassettes for equalisation and dynamics using the 1084 circuit design.

Each EQ cassette adds eight channels of processing, as does the fitting of a dynamics cassette.

There is an AD/DA cassette that provides eight channels of two-way conversion for sample rates up to 192kHz.

Access to the functions and visual feedback of the status of all of these options is via the user surface rather than exclusively menu driven through the data management software interface, which is always welcome.

The majority of analogue connections on the Genesys are accessed via Tascam DA88 convention 25-pin Dsub connectors. Each channel has balanced XLR and TRS inputs for microphone and line input options respectively.

Depending upon the options fitted, the array of connections can vary substantially. There are no surprises with what you find, with MIDI input and output, Ethernet, AES timecode input (the Genesys can act as slave only) amongst other familiar connections.

Connection to your DAW of choice is via MIDI control, either utilising the MIDI input output sockets, or more likely with MIDI over Ethernet then configuring through your DAW interface.

Ergonomics And Metering

The control surface of the Genesys follows a now-familiar colour scheme in line with outboard products.

From left to right we first come across the 16 in-line channel strips leading into the four stereo effects returns. These sit above the eight bus output faders. To the right, we find the main column of master controls, including master sends, oscillator, cue mix control, global setup and assignable routing buttons, monitor speaker configuration/selection with volume, and DAW controls.

The metering on the console is very comprehensive ▸

THE REVIEWER

SIMON TILLBROOK is the Principal Music Tutor at Islington Music Workshop in London. The rest of his time is spent as a freelance engineer, mainly in the USA.

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indeed. The meterbridge is also where we find considerable visual feedback for routing configuration and processor use.

Each of the 16 channel meters, eight return/bus meters, and main stereo output meters has a dual scale showing VU on the left and dBu on the right. Buttons next to the main output meters select what is being displayed and subsequently which scale is in primary use, along with peak/peak hold and scaling for PPM mode to +14, 18, or 20dB.Below the meters are a number of LEDs. In the case of the 16-channel meters, these show input selection, routing, processor intensity, and metering source. This can be either channel path input, DAW send or return. The eight return/bus meters have LEDs to show signal presence and if the signal feeds the main bus.

Below the two main output meters are LEDs showing which PPM reference has been selected, and the status of the power supply.

Channel Strip

The AMS-Neve Genesys channel strip contains all the elements of a traditional channel and monitor path in-line design brought up to modern workflow approaches.

The channel input section has a full complement of functions including variable input level from +20 to +70dB with LEDs to indicate input type.

Buttons for phantom power, Hi Z, phase reverse, high pass filter with a preset 90Hz turnover frequency and -20dB pad are all here.

A +/-15dB fully variable fine adjust input trim control is typical of many on the AMS-Neve Genesys surface in that the control is pushed to cycle through the options. Here, as in all cases, there are associated LEDs to feed back the selected choice.

The Process section of the Genesys channel strip controls selection and placement of chosen

processors. If either, or both, of the EQ and dynamics options are fitted, you can activate them here, or utilise the two insert points to bring in external processors from your own collection. You can select to apply to channel or monitor path signals as well as choose the specific order your processor signal flow chain follows.

The auxiliary section can take feeds from either channel or monitor path and be set to pre or post fader send.

The direct output section has a rotary level control for up to +10dB of boost, and can be pushed to toggle through six different options (one of which is off) for signal choice and routing. These involve channel or monitor path pre/post processing, fader and cut.

The monitor section of the AMS-Neve Genesys uses rotary controls for level and pan, with associated cut and solo buttons, including a solo isolate. Source selections include DAW send and return and channel path signal, along with LEDs to indicate your source selection, and any processing allocated to your monitor path from the previous sections can be found here. Indeed, there is a lot of visual feedback to keep you informed.

Swap is an individual fader swap between the monitor rotary fader and the channel linear fader at the bottom of each of the Genesys 16 channel strips.

Master Section And DAW Control

The four stereo effects returns of the Genesys, just like the six auxiliary sends, are of familiar layout and function. An insert point on the main output for your favourite EQ or mix bus compressor has controls to set pre/post fader.

There is a headphone socket on the front of the Genesys that is normally fed from the control room monitor options, but you can override this with either external sources or cue mixes. Buttons for these selections are next to the volume control.

Other master section features include a sine wave oscillator, master selection controls for quick global selection of input source for channel and monitor paths and solo modes, as well as a hardware routing matrix accessible by any of your audio paths. Control room monitor speaker selection, setup and volume control, and the two dedicated cue mix feeds are also located here.

The 8T section or bus outputs have auxiliary feeds and insert point activation buttons for each of the eight.

The eight faders also double up as controllers for your DAW of choice. You can switch fader control in banks of eight with the arrow keys next to the faders. This is also where we find a set of transport controls and automation buttons.

A glide pad with two buttons for mouse navigation sits below what is a clear sign of the

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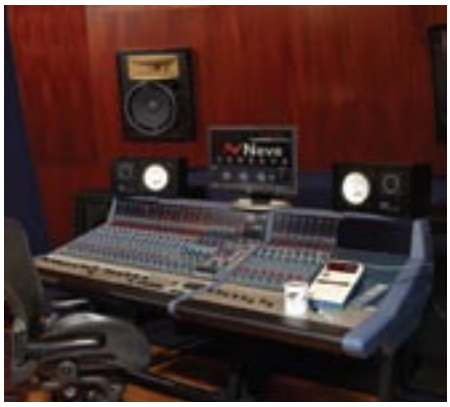

times we live in. An alphanumeric pad allows for naming and labelling of tracks and audio via phone text type entry.

As with all the channel faders, small four-character alpha displays above the fader reflect DAW track labelling.

A DAW screen with four soft rotary controls and set of control buttons will be able to access and control plug-ins on the console surface.

Operation

My time with the AMS-Neve Genesys was limited, and one thing with Neve console products is the understanding that there will be a learning curve when it comes to operation.

The console surface and layout has a familiar look to it, and controls are all clearly labelled and have a good solid feel to them. Build quality is one impression you are hit with immediately, especially if you consider some of the Genesys primary competition.

SEL Mode is important to understand when it comes to general set-up and routing configurations. The choice of either hardware assignment or using the onboard computer display to assign in a grid type format means all will have a way that will suit them from the start. You quickly find yourself using a two handed approach to working with the Genesys, moving over the surface quickly.

Set-up of the DAW (Pro Tools in this case) involved connection to the DAW host computer using MIDI over Ethernet, and following the comprehensive set-up instructions found in the detailed, well-written Genesys manual. The manual and other documentation are worth mentioning as they are all easily followed and clear when it comes to the description of what is a comprehensive and complex product. DAW control from the Genesys worked well. DAW controls are nicely grouped together, and my texting capabilities have improved somewhat as a side effect of using the data entry pad.

Those familiar with the 88R and Encore plus will be at home very quickly. AMS-Neve has decided not to dilute functionality and offer the full complement to Genesys users knowing that there will be a learning period, but such is the price for such comprehensive flexibility and control.

The EQ and Dynamic options are easily called up, assigned and adjusted on screen and, like the preamps, sound exactly as you would expect, as they are the same circuits we are already familiar with. No compromise once again here.

With two insert points per channel, integrating your own outboard dynamic processors and preamps gives a lot of signal processing flexibility.

Talking about the sound of the AMS-Neve Genesys is not required in any detail, as it sounds like a Neve. That is what you would expect and what has been delivered. Like others with similar products, the analogue signal path sound is the draw, it is then about how well the control works over it all.

Metering is very good indeed. Fast, highly visible, accurate, and flexible. Visual indication throughout the Genesys is excellent.

Conclusion

If you accept the need to spend time in getting to understand the AMS-Neve Genesys then you will be rewarded with stunning flexibility in such a small footprint. Build quality does set the Genesys apart from some of the competition, and the fact that Neve has maintained fully featured systems and circuitry as in their large format products adds to the attraction.

How does it fair? Extremely well indeed. The time it has taken for the AMS-Neve Genesys to appear in production has been well spent.

INFORMATION

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IBC Special

big shiny trucks, big outdoors

KEVIN HILTON discovers that greenery and fresh air aren't the only things that will be working in outside broadcast's favour at IBC; there's plenty more reasons to stop off and enjoy both the sunshine and big shiny trucks.

Exhibitors inside the RAI Centre during IBC probably look at the outside broadcast area with a degree of jealousy. All they have to do, perhaps the house-bound participants are musing, is drive up in their big shiny trucks, park, and they're all set. But we have to not only get our wares here, we need to get everything unloaded, into this concrete warren, and stick it on the stand – which we had to build as well.

The IBC OB/uplink enclosure has grown over recent years, becoming a necessary part of visitors' itineraries and not just something of the occasional point of interest that most people walked past, as it tended to be at one time. This says a lot about the development of the OB market in the last 20 years; the building of bigger trucks propelled by the sports broadcasting boom that began in the early 1990s has continued as live programmes of all kinds – music concerts, entertainment, as well as sport – have become ever more prominent in TV schedules.

For HD Hunters

HD has further changed the shape and nature of the OB scene, with fleets shifting towards the high def format, although SD has not succumbed to its onwards march completely. During this year's IBC the outside area will feature trucks/exhibits from Outside Broadcast, the Belgian company that was at the forefront of HD in Europe, SIS LIVE, marking its second year of existence after parent group Satellite Information Services bought BBC OB s early in 2008, scanner builder Spectra Specialist Engineering, flyaway package and satellite news gathering equipment manufacturer Sat-Comm and TK-3.

Previously best known for manufacturing mobile camera seats and supports, TK-3, with its headquarters in Poznan, Poland, has made a foray into OB vehicles but at the smaller end of the scale, tapping into a growing trend. The SE-Van is based on a Volkswagen Caddy and houses five Sony PMW-EX3 cameras, a video-audio switcher, computer graphics, and two VT recorders. The meaning behind the initials – small event – sums up the market this new vehicle is aimed at, something already targeted by SIS LIVE with its SIScaster.

Launched in February this year is a people carrier offering cameras and full facilities for streaming video production, with an integral IP uplink, although small-scale conventional television broadcasts are also in SIS LIVE's sights. The SIScaster was used prior to its official launch by production company RDF Media. Director of Production for Digital and Commercial Programming, Tim Breadin, commented at the time, "SIScaster is an impressive, well designed, compact unit that has most of the capability of a full blown OB scanner at a significantly reduced cost that has the potential to open up a new market for content producers, broadcasters, and web platforms."

> "The shift to 5.1 is part of the overall adoption of HD by OB contractors as their broadcast clients either transmit more in the picture format or compile a library of material for when it is the norm."

Big Is Beautiful

The big truck still holds sway in the market, however, as new HD vehicles are built or existing SD units converted to meet demand for high def. SIS LIVE put its latest HD unit on the road during 2009, and Belgian operation VideoHouse has just announced two additions to its fleet, one due at the end of this year, the other scheduled to appear in April 2010. At the core of these are the first Riedel MediorNets to be sold in Europe. The system is a fibre signal carrier for multi-channel HD/SD video, audio, intercom, and data. It has been designed to operate with a range of different network configurations, using integrated coarse wavelength-division multiplexing (CWDM) and uncompressed real-time signal distribution and routing.

Guy Kreydt, Head of Video at VideoHouse, says the company was looking for a means of interconnection using just two fibre links that would carry all the intercom and lines needed for big OB productions over long cable runs. VideoHouse's MediorNets will work in conjunction with a VSM Virtual Studio Manager controller in each vehicle to run all functions. Other equipment includes Thomson multi-format HD cameras, 20 in one truck, 16 in the other, and Stagetec Aurus audio mixing consoles.

Mandatory Surround

Live sport and concerts, particularly for DVD release in the latter case, have made 5.1 capability a critical part of an OB truck's capability. Stagetech, Studer, and Lawo are the dominant brands on mainland Europe, while Calrec is found in the majority of trucks in its home market of the UK. Barry Johnstone, Managing Director of CTV OB s says the manufacturer's Bluefin processing technology used on the Alpha, Sigma, Omega, and Zeta consoles, is proving popular in the market. "We will upgrade as required," he says. "It's something people are moving to as the demand for 5.1 grows."

The shift to 5.1 is part of the overall adoption of HD by OB contractors as their broadcast clients either transmit more in the picture format or compile a library of material for when it is the norm. Steve Jenkins, Managing Director of NEP Visions, says there is "less and less" demand for SD facilities these days. Some of the company's older trucks have been sold and "found new homes", making Visions' fleet increasingly HD.

With HD just about established OB operators now have to consider a new technology designed to enhance the viewing experience: stereoscopic 3D. Jenkins' personal view is that 3D has gone beyond its novelty roots, offering something different to viewers and in the process allowing broadcasters to "build revenue". Sky, a regular football client for Visions, clearly thinks so and is set to launch a 3D service during next year. "It's more than HD," says Jenkins, laughing at the unintentional pun, "and adds extra dimensions."

With new 3D camera rigs and control and processing programs set for launch during IBC, those dimensions will be to the fore at the RAI, both inside and out.

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IBC Special

something to shout about?

KEVIN HILTON looks at what will be making the loudest noise at this year's IBC.

Loudness is one of those previously arcane areas of sound operations that is concentrating the minds of broadcast engineers and post-production dubbing mixers today. The problem of discrepancies in perceived sound levels between programme material – TV dramas, the news, documentaries – and what goes in between it, primarily commercials but also promotions like trailers, is rooted deep in modern broadcasting, but it has been accentuated by multiple digital television channels and automated play-out.

Volume Wars

Advertisers want their hugely expensive works of persuasion to stand out; eye-catching visuals and stars help but heavily compressed sound-tracks really grab the attention. They also annoy the whatever out of viewers, who have to grab the remote to turn down the volume or, often, mute the loudspeakers completely, which defeats the whole purpose.

Serious attempts to deal with loudness were made during the late 1990s, with algorithms designed to quantify the content of a signal, rather than just measure its peak. A new breed of audio meter was manufactured by companies including DK-Technologies, Chromatec, Dorrough, RTW, TLS, and Dolby. Unfortunately, each used a different approach, so there was no standardisation – and no compulsion for broadcasters and facilities to shell out for new equipment when their VU meters and PPMs were considered to be doing well enough.

In 2003 the International Telecommunication Union (ITU) formed a working group to develop a testing plan that would form the basis of a recommendation for a metering method. The process involved evaluating the leading meters and led to two sets of guidelines; ITU-R BS1770 Algorithms to measure audio programme loudness and true-peak audio level and ITU-R BS1771 Requirements for loudness and true-peak indicating meters.

Junger Audio's Level Magic C8000.

Most manufacturers now produce meters based on these specifications, and in the last four years European regulators have imposed rules for measuring loudness and producing material within them to create a consistent audio output. In Italy the Authority for Communications (AGCOM) brought in rules during 2006 that are based on 1770 and cover all broadcast material, including commercials, promos, idents, and the main programmes, with a maximum difference between them of 0.6dB.

> "A primary aim of P/LOUD is to agree reference points for loudness, which are missing from the ITU guidelines."

During 2008 the Broadcast Committee on Advertising Practice (BCAP) of the UK Advertising Standards Authority issued guidelines on audio levels for television advertisements. These recommend the use of meters designed to quantify comparative sound levels, rather than conventional PPMs and VU meters: "Measurement and balancing of subjective loudness levels should preferably be carried out using a loudness-level meter, ideally conforming to ITU recommendations."

There is still a loophole for companies that haven't yet installed loudness meters; the BCAP rules allow the use of peak-reading meters, restricting the maximum level of commercials to being "…at least 6dB less than the maximum level of the programmes", to compensate for any compression.

Technical services company IMD (Independent Media Distribution) has developed a custom delivery system that performs a quality control (QC) check on the soundtracks of advertisements to ensure they are within the parameters set by BCAP. This software-based method is used by ITV, Channel 4, MTV, and Red Bee Media, the first commercial play-out centre to employ the ITU specifications. IMF has expanded this year, building a similar system for French broadcaster TF1, which uses it for QC evaluation of commercials aired on its channels.

IMD is also using a DK-Technologies MSD600M++ with SDI de-embedder card at its London facility to keep material within BCAP guidelines, while Soho commercials facility house Grand Central has upgraded five of its existing DK meters to incorporate new loudness software and installed a MSD100C meter. During IBC 2009 DK will launch a graphical loudness display for its PT0760M HS/SD waveform monitor.

Also new at the show is a range of Jünger Audio products that address loudness: the ANA Series of input/processing cards, DSP and interface cards for the C8000 Level Magic system and the EDSI card, aimed at satellite re-broadcasters. Multiple audio channels are another challenge in the overall area of loudness; Dolby entered the market with its Media Meter, which will be seen during IBC 2009. Linear Acoustic will use the show to gives its AERO.qc Audio Quality Controller a first showing. This works to the ITU recommendations and will be marketed alongside the LAMBDA digital audio and metadata monitor and AERO range of loudness controllers.

A P/Loud Pardon?

The ITU has given broadcasters and facilities a foundation on which to build but other organisations, including the IRT and EBU, are moving the original work on to create what is hoped will be a foolproof means of measuring and controlling loudness. The EBU's P/LOUD working group had its first meeting during IBC 2008, and since then has staged subjective tests of meters and programme material.

A primary aim of P/LOUD is to agree reference points for loudness, which are missing from the ITU guidelines. The group is chaired by Florian Camerer of ORF, who says P/LOUD's goal is to find a methodology for subjective testing and evaluation. The work is based on 1770/1 and incorporates TC Electronics' research on loudness descriptors, which was presented to the 2008 AES in San Francisco and forms the basis of the manufacturer's TC LM5D Radar loudness meter.

Peak Still Party

Camerer still sees true peak as relevant in loudness 'for technological reasons' and says this might work in parallel with the new quantitative methods. The hope, however, is that loudness units will become the main form of metering. "It's really quite liberating," says Camerer, "not being tied to a peak and have the freedom to just mixing using one's ears, backed up by the loudness technology."

P/LOUD is consulting with the ITU and expects to publish at least some of its finding during November this year.

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IBC Special

A New Era for Fountain Studios

With 5.1 and digital becoming increasingly important features of broadcast, KEVIN HILTON talks to Fountain Studios, a commercial facility that's recently made a double leap to both formats with the help of Calrec's Apollo.

Mono reigned supreme in television sound for years until, during the late 1980s and early 1990s, it found itself having to share the mixing console with stereo. The two have co-habited ever since, with the venerable single-channel format still given the consideration of compatibility from the two-channel usurper. Now those in TV audio have to think about a third format as 5.1 becomes, if not widely used, an important component of the broadcasting process with the future in mind.

Public broadcasters have already made the transition but perhaps a more telling move is commercial studio facilities making the jump. Fountain Studios in Wembley, Northwest London, is the biggest independent, purpose-built TV production space in the UK. In the last couple of years it has become synonymous with light entertainment (LE) behemoths *The X-Factor* and *Britain's Got Talent*.

A Surround Shower

Fountain's audio department has made the double leap from analogue and stereo to digital and 5.1, replacing its long-serving Calrec Audio S Series desk with the same manufacturer's new Apollo, the first installation for the product in the world since its launch at NAB 2009. The Apollo was hailed as having twice the processing power of Calrec's benchmark digital console, the Alpha, due to the next generation of the Bluefin DSP platform.

Bluefin 2's processing engine operates at both 48kHz and 96kHz, giving the Apollo up to 1020 DSP channel paths and 128 program busses, or 510 channel processing paths and 64 program busses respectively. Another prime feature is the new version of the Hydra network, which has 8192x8192 cross-point routers and accommodates analogue, AES, MADI, SDI, and Dolby E signals.

Foundations

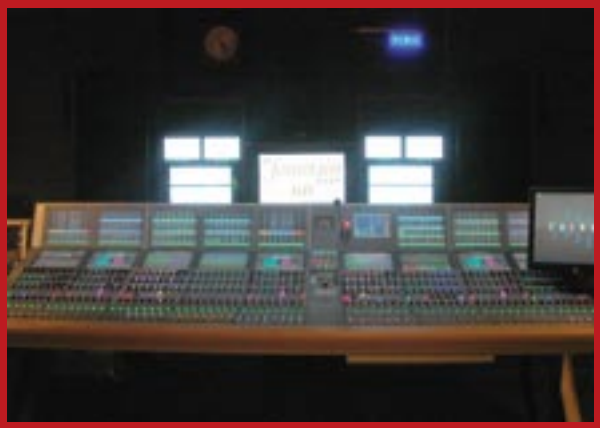
Fountain Studios was founded in 1985 as a medium-sized studio and post-production facility, based in New Malden, Surrey. The company expanded in 1993 by buying the much bigger Limehouse Studios space in Wembley. The history of this studio goes back to 1926 when it was opened by British Talking Films, since when it passed through many hands, including 20th Century Fox, Lee International, and TV companies Associated Rediffusion and London Weekend Television, before Limehouse took over in 1989.

> "Fountain's audio department has made the double leap from analogue and stereo to digital and 5.1, replacing its long-serving Calrec Audio S Series desk with the same manufacturer's new Apollo, the first installation for the product in the world since its launch at NAB 2009."

Changing Spaces

Fountain prides itself on its staff, both full-time and freelance, the technology offered, and the in-house chef's skills, but the unique selling point is the 40.59m x 27.86m studio space, which can be divided into two separate studios by a wall lowered from the ceiling. The scale of something is often put into recognisable terms by using a double-decker bus as a comparable measure, but the method works in this case as the studio was able to accommodate such a vehicle for the production of terrible old '70s sitcom *On the Buses*.

The Wembley studios are now Fountain's sole base and have been upgraded several times since 1994. HD cameras and routers, vision mixers, and monitors were installed last year to keep in step with the increasing demand for high def studio programmes, and now the audio department is able to offer 5.1, the aural companion to the picture format.



Future Sound Of Wembley

The Apollo is installed in the main sound control room linked to the production galleries, and has been upgraded and re-furnished by Munro Acoustics to make it better suited for live 5.1 mixing. "We didn't consider staying with analogue," comments Technical Director Chris Cooper. "The move to HD was going to happen and we wanted to have 5.1 capability to go with it, as well as make the transition to digital audio. We started looking around for a new console a couple of years ago and heard of the Apollo as a paper design."

Cooper and his technical colleagues followed the development of the Apollo and the finished product contains many features suggested by the Fountain team on visits to Calrec's factory at Hebden Bridge. "The obvious requirement was for it to do what we want in general," Cooper says. "More specifically we wanted an assignable desk that could handle 5.1 easily and be simply configured. A feature I like particularly is that all the faders are evenly spaced, with no gaps between the blocks of faders."

> "There are only tens of thousands of viewers at home with systems to receive 5.1, compared to millions still listening in stereo, so we have to consider compatibility, as well as archiving for surround when it is more established."

Choice Considerations

Ease of use and familiarity were major considerations, as the console will be operated by a roster of freelance sound supervisors, many of whom have already been in to play with the new arrival. Another factor in Cooper's choice of Calrec was the support offered by the company, combined with a degree of brand loyalty.

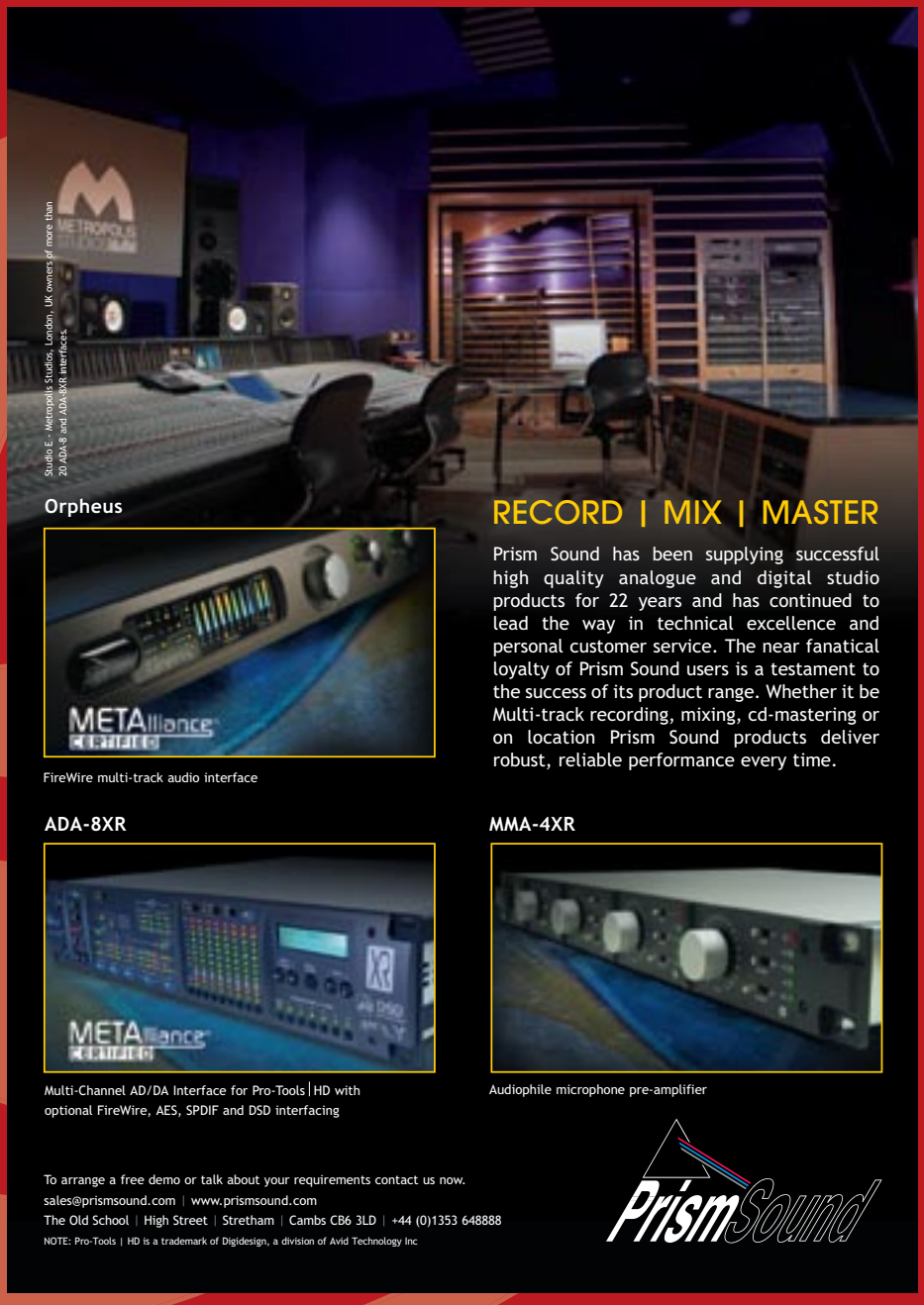
Cooper acknowledges that the majority of shows produced at Fountain right now are in stereo, an estimated 90 percent, and that this will continue for some time, but he is certain installing the Apollo now is the right move. "The demand for 5.1 will grow and we have worked with it before, bringing in an OB truck with a surround desk," he comments. "There are only tens of thousands of viewers at home with systems to receive 5.1, compared to millions still listening in stereo, so we have to consider compatibility, as well as archiving for surround when it is more established."

Prep For Greatness

Each broadcaster and facility is developing its own method of working in 5.1; BBC Studios and Post Production has a dual room approach, with the sound desk in the gallery feeding signals to a separate surround suite where the final mix is made. Cooper says facilities like Fountain do not have the space or financial resources to adopt such a methodology. Instead, he explains, preparation during rehearsals will produce a good result. "We get all the stems and listen to the stereo down-mix, which set-top boxes will produce, and make sure everything sounds all right. Once the 5.1 mix is done listening to the down-mix is very important."

From Apollo To Artemis

The Apollo installation at Fountain is being followed by the new desk going into the Ascent Media-run facility at MediaCity: UK at Salford Quays. And no sooner is the Apollo getting out into the market than the range will be expanded at IBC with the launch of the Artemis, based on the same technology as its bigger sibling.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Apple Logic Studio 2

'Everything you need to produce music', it says on the tin, with countless updates to V8. STEPHEN BENNETT finds out if Logic 9 is indeed the answer to all his production needs.

Apple's sudden announcement of an upgrade to its Logic Studio package should really come as no surprise from a company whose ability to keep ongoing development under wraps puts most intelligence services to shame. What is interesting though, is that this long-awaited release (the original Logic Studio was reviewed in *Audio Media* in October 2007) comes out just before the arrival of the new version of OSX - Snow Leopard. Apple had announced that, in this update to Leopard, key applications would finally be 64-bit ready, so many Logic users were also hoping for a fully 64-bit version of the DAW. Logic Pro 9 isn't that product – so how this new version fits in with the expanded memory capabilities of Snow Leopard remains to be seen. However, Apple has confirmed that Logic will take advantage of GCD for dynamic thread allocation under Snow Leopard. But as sample libraries get larger and larger, Logic's current sub-4GB memory limitation is proving, well, limiting to those using third-party packages. Logic Studio 2 comprises updates to the whole suite, including Logic Pro 9, Mainstage 2, Soundtrack Pro 3, and updates to Compressor and Waveburner.

> "...Logic Pro 9 has had some major improvements and additions. Apple says that there are over 200 of them, many of which have been requested by users over the last two years – actually, some of them have been on my request list since Logic 5!"

Installation

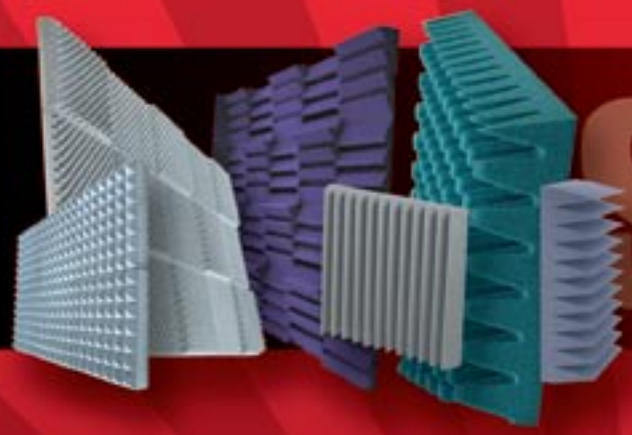
Logic Studio can be purchased as a new package or as an update from earlier versions of Logic. As before, pricing is extremely competitive and the programs are supplied on eight DVDs – so make sure you have plenty of coffee on the go when you're installing. There's also an excellent DVD of demo content including work by Lilly Allen and the Killers which should provide food for thought for both newbie and seasoned pro alike. There are no paper manuals supplied as standard with Logic Studio 2 and, within the program itself, the PDF manual that used to open from the Help menu has been replaced by Apple's system wide Help system. I've always found this too slow when searching, and the fact that it always stays religiously on top of all your other windows is incredibly annoying. I'm obviously not alone though, as Apple quickly made available a proper PDF manual as a download from its website (http://documentation.apple.com/en/logicpro/). Two of the components of Logic Studio, Compressor 3.5, and Soundtrack Pro 3 are common to Apple's video editing software, Final Cut Pro (FCP) – which has also had a major update – and if you are loading Logic Studio onto a Mac with an earlier version of FCP, the installer won't let you install these components. Though Apple's specifications state that the minimum system requirements are an Intel Mac, the package installed and runs successfully onto my G5 – though you need to be also running OSX 10.5 (Leopard) for this to work. The install leaves previous versions of all the components of the package untouched, so you shouldn't have problems with earlier projects, and third-party plug-ins should function as they did under the original Logic Studio.

Logic Pro 9

While the user interface of Logic Pro 8 came as quite a shock to seasoned users of the program, version 9 is ostensibly unchanged in appearance. The small changes introduced by version 8's incremental upgrades remain, such as the ability to remove menus and Transport bars, but under the hood, Logic Pro 9 has had some major improvements and additions. Apple says that there are over 200 of them, many of which have been requested by users over the last two years – actually, some of them have been on my request list since Logic 5! First up is Flex Time – with this, Logic now has the ability to easily stretch and compress the timing of Regions or parts of Regions using the new Flex tool. It's remarkably easy to use and allows you to select from several algorithms that best suit your audio. The results obtained depend upon the source material – which is true of any such tool in any software – and artifacts will become audible if you try to elongate the audio too much. But if you're just changing the timing of a note or a trumpet part for example, it works beautifully and intuitively. Logic Pro 8 introduced the Quick Swipe Take folder concept, making it easy to select and create a composite taken from multiple passes. Logic Pro 9 has addressed some of the limitations of this feature and it's now possible to move individual ▸

THE REVIEWER

STEPHEN BENNETT has been involved in music production for over 25 years. Now based in Norwich he splits his time between writing books and articles on music technology, running his own Chaos studios, and working in the Electroacoustic Studios in the School of Music at the University of East Anglia. He's also a filmmaker with several music videos and short films to his credit. www.stephenjamesbennett.co.uk



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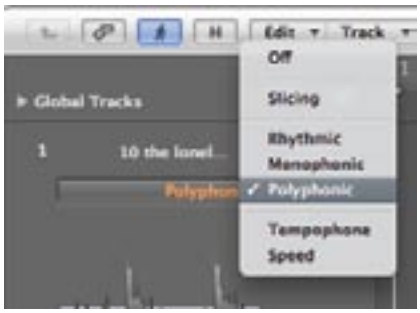

Flex mode settings.

takes in the Quick Swipe folder and also apply the Flex Time tool to these. It's now ridiculously easy to compile the perfect take and, if you were put off by the feature's limitations in the past, it's definitely worth revisiting in Logic Studio 2. Now that Apple have put tempo manipulation tools in place they've applied them to other aspects of the program too. You are able to non-destructively quantize multi-track audio, making editing and timing adjustments of drum tracks much simpler. Varispeed has been implemented and it's easy to speed up and slow down entire multi-track projects, while Speed Fads (Tempophone Flex Mode setting) makes Joe Meek/Turntable style speed ups and downs a doddle.

Regions that are being processed by plug-ins on a track can now be individually rendered to an audio file independently of the other Regions on the track. All I can say is 'Hooray!' Freeze has had an update and you can now specify pre and post processing via plug-ins when freezing. Drum parts can now be easily replaced with samples, and any imported audio's tempo can be auto conformed to the current project. It has been possible to do a lot of these things in earlier versions of Logic Pro using clever work-arounds or third-party plug-ins, but Apple has now made them simple to use and easily accessible. I spent a few days editing some 'recorded live in the studio' material that I'd previously worked on in Logic Pro 7, which involved extensive drum quantization and replacement, and getting the bass to sit in time with the drums. Logic Pro 9 allowed me to achieve excellent results in a fraction of the time it took using the previous version – and without a single crash. One issue I did have was that the program now complains when it is running out of memory and quits the project – which happened on both Macs I was using, each with 4GB RAM. This is a new (and very annoying) 'feature', which hopefully will be addressed by Snow Leopard's expanded memory capabilities.

The most notable omission from Logic Pro 9 is a Melodyne-like ability to adjust the pitch of individual notes. Many of Logic's competitors have this function built-in and while third-party solutions are available, they usually involve some kind of compromise and, in my case, lost audio files! It is possible that Snow Leopard will make new pitch algorithms available to Logic Pro 9 and this omission will be addressed in a future update. Logic Pro 9 features several new tools for guitarists and, having spent a summer demonstrating Logic to metal axe-wielders, I think there's a vast untapped customer base for Apple amongst guitarists.

Amp Designer does what it says on the tin; it allows you to choose from a selection of modelled amplifiers, cabinets, and microphones and I have to say it sounds great – though whether seasoned guitarists will find that it stacks (ho ho) up to the likes of Native Instrument's Guitar Rig remains to be seen. Sadly there's no bass designer yet so I can't quite retire my Line 6 hardware. Pedalboard could be seen as a companion plug-in in to Amp Designer in a way – although the effects can be used on any source. It's a virtual stomp-box board with enough modelled effects to keep any guitarist happy, and which covers the whole range from distortion to delay – all with MIDI control. Apple's partner Apogee's GEO

Drum replacement tool.

USB interface is designed for guitarists, and its footpedal controls are designed to work out of the box with Logic Studio 2. The Score editor has been updated, with many of the improvements relating especially to Guitar-based notation – again emphasising Apple's new commitment to

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axemen (and women). Apple has also released a version 9 of Logic Express – which is basically the same as Logic Pro 9, but without the extra suite of software found in Logic Studio, surround capabilities, and a few of the more esoteric functions of the Pro version.

In a review this brief, it's hard to cover everything that's been improved in Logic Pro 9. Being able to add text notes to the mixer, directly create EXS24 samples from Regions, the new Warped effects in Space Designer, a new 'Voices' Jam Pack, scaling of Logic's plug-ins windows, and being able to select which of the various aspects of a Track can be imported, are all new features and should make the Logic experience even more rewarding.

Mainstage 2

Mainstage was a surprise addition to the original Logic Studio pack and has proved its worth already with many high profile acts (and myself!) using it to replace a brace of hardware on stage. Version 1 was pretty stable, but many users were crying out for the ability to play alongside a sequence or a pre-recorded audio file, and Mainstage 2 now features both audio file playback and Rewire, and MIDI out support. In conjunction with Amp Designer and Pedalboard, Mainstage could now also be the centre of a guitarist's live rig – Apple is well on its way to replacing most of a band's on-stage hardware, and I can imagine that in the future, a typical four-piece band might well feature four Apple computers!

Soundtrack Pro 3, Compressor 3.5, Waveburner 1.6

Soundtrack Pro 3 and Compressor 3.5 originally appeared in Apple's Final Cut Pro video editing suite, and both have received updates in Logic Studio 2. Soundtrack Pro 3 retains its nice features, such as the frequency spectral view and non-destructive audio editing, but there's less need to use it unless you are doing extensive audio editing or are working to picture with FCP. Compressor has been upgraded to incorporate new standards in video and audio, and is a one-stop shop for exporting both into various formats – it's especially useful for exporting the various surround formats. Its preset system makes it easy to batch up commonly performed tasks – I personally find it really useful when sending videos to YouTube to make sure the video and audio is optimised for the website. Waveburner, Apple's CD authoring program, has received some minor updates and bug fixes and now features DDP (Disc Description Protocol) support making it pretty much all you'll need to burn Red Book ready CDs ready for the mastering house.

Conclusion

At first glance, Logic Studio 2 doesn't look that different from the previous package. But it incorporates many of the top 'asked for' features from users and does so with aplomb. Many of the myriad small improvements make working with the various programs easier, while the supplied tools and plug-ins mean that you need to turn less to third-party solutions – it really is becoming a one stop shop audio production suite. I for one can't wait to see where Apple takes Logic Studio after the release of Snow Leopard, and what the improvements in memory handling and the ability to offload CPU cycles on to the GPU will enable the programmers to achieve. The future looks bright for Apple's flagship audio package.

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Fast Forward

Spool Post Production

Spool just got bigger and better. PAUL MAC visits the relocated, rejuvenated, and multi-faceted audio post facility, sitting at the sweet spot of a developing media centre in the Midlands.

Spool Post Production – up until recently based out of a facility that was part of the Confetti Institute Of Creative Technologies in Nottingham – has moved. It hasn't moved very far, granted, but the change is spectacular and promises to be more so into the future. The studio is now situated in the basement of the Antenna development, the newest arm of Craig Chettle's growing media empire (so far Confetti, Spool, Antenna, and Confetti Constellations). Spool incorporates a Dolby Digital 5.1 approved film dubbing and mixing theatre, a stereo mixing suite, a voice over booth and Foley studio, as well as three additional editing suites. The entire facility is equipped with Pro Tools HD throughout, while the main dubbing theatre also incorporates an Avid/Digidesign D-Command mixing desk and custom-designed Exigy 5.1/6.1 monitoring system. The building/acoustics and monitoring were the responsibility of a now established double act – White Mark Acoustics and Exigy respectively.

A Blank Canvas

The Spool team was given the luxurious blank canvas of a good-sized basement beneath the Antenna media centre and business services development. Confetti was also looking to expand, so Spool's move facilitated that as well. Initially, the main desire was to fill a gap in its services – a Dolby approved mixing room. However, Greg Marshall, Technical Director at Spool, reports that it wasn't until the first meeting with White Mark that plans really started to take shape. White Mark's David Bell encouraged the team to consider in detail how they wanted the facility to work. They listed desirable spaces, and White Mark drew up an initial plan, with interaction between rooms and services at its heart. "…with the exception of one change, we went with it," says Marshall.

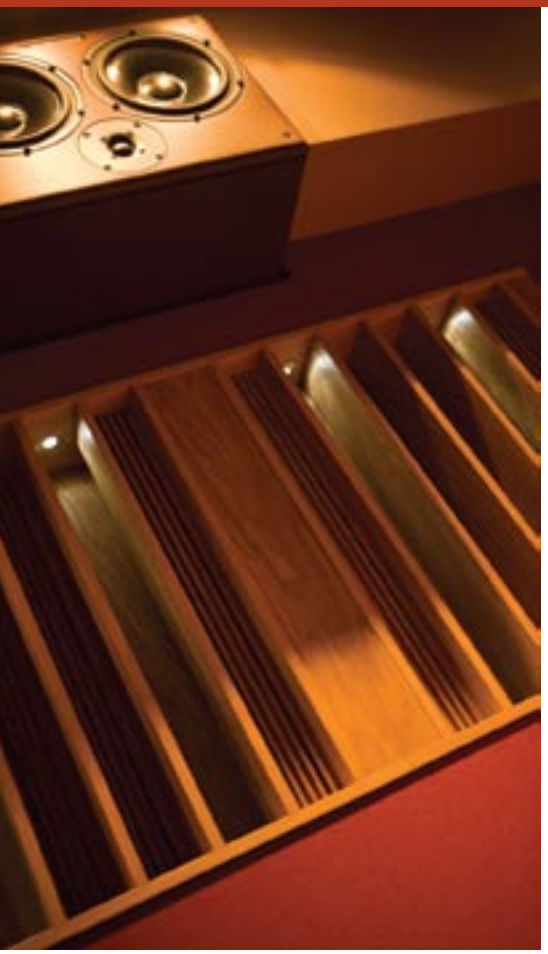
There are no floating shells in the development. Apparently that was a possibility at one stage, but Marshall decided that Foley traps needed to be on 'terra-firma' for the best sound. The result is a large mass of concrete that goes "right down onto the rock-bed of the building, to give us a really nice sounding footstep."

Praise, in this instance, goes both ways. "They're a very together company," reports David Bell of White Mark Acoustics. "They had a very sound view of what they wanted – a Dolby licensed room and associated ancillary spaces. He [Greg Marshall], technically – and the builders [Confetti Constellations] and everyone – were remarkable. They all knew exactly what they wanted.

"The quality of the build is a joy… the builders were just a joy to work with. If you look at something like the detailing on the skirting board… you think 'this looks expensive'. That's because of the care that's been taken by the builders." The main challenge in the space was the profusion of structural pillars, but working closely with Dolby, White Mark managed to come up with a solution that also satisfied some fairly heavy isolation requirements as the building is close to a busy main road. Bell: "We've had a good run lately. There have been some rooms that really move the soul, and Spool is one of those. It sounds really musical, as well as being accurate for film mixing."

Marshall is equally praising of Matt Dobson's Exigy monitoring solution: "…Unlike buying an off-the-shelf speaker, White Mark send the drawings to Matt, and he designs the speakers around the room, and that relationship is absolutely paramount – that's why White Mark and Exigy rooms sound so good.

"On top of that, Exigy was kind enough to take us



to other studios – Matt took us up to Savalas in Glasgow, which is a great sounding space, and we had the opportunity to really put his systems to the test before we parted with any hard earned cash… Matt came down here and spent a week setting them up… every little detail, to the point where it'd be midnight, and we'd just be sweeping up, and he'd be in there still tuning the system.

"…I think it's the most comfortable, least fatiguing space I've worked in. It's really, really good. A 16-hour day can go by quite smoothly."

Posting A Profit

Over its eight-year history, Spool has developed a good number of core clients. By far the biggest sector for the outfit is the independent film arena, where regional support is strong. One such regular client is Warp Films, based in Sheffield.

Also, given effort made in recent years to stimulate outer-lying regions (anywhere other than London, in other words), there is funding to be had, and significant savings to be made in production. "We've definitely benefited from the fact that there's been a lot of investment in film in this region," expands Marshall. Spool has hosted work for Universal Pictures and Pathé in the past, and Marshall can see only more opportunity in the future.

Timing for the new facility opening has been good – the start of the summer season is a busy time for UK film makers. Marshall: "Their slate really kicks off now towards the end of the summer. They're shooting over the summer – obviously best light and conditions – so we expect to continue with independent feature releases towards the end of the year; definitely through the autumn and into winter. These are projects that are generally a combination of Film 4-type projects, so that's what'll make up our main output."

Spool has benefited from this market in a less direct way – the accumulation of an interesting and arresting body of work. What would you rather have… an expansive back catalogue of standard format, fast turn-around, unchallenging TV, or a strong portfolio of creative, inspiring, and interesting products? It probably depends on your priorities and your market, but the latter is what does it for Spool. "We've got a lot of track history generating interesting sound, and that's what I think we've always been about," asserts Marshall. "The TV world's very much in and out of the door as quick as possible, there's no time to hone your craft or show off, it has to be mixed in a certain way… our music background has also helped us."

That last point is certainly held up with a couple of recent projects – Arctic Monkeys, and The Mighty Boosh. The Arctic Monkeys project was a six-camera shoot at Manchester's Apollo venue. Spool did the recording and the post production for a 5.1 DVD. It was such an unusual project that the team pulled resources from Confetti and assembled a kind of creative conference. The members included film lecturers, sound engineers, senior management, and so on, simply to get different 'takes' on the project. Marshall: "It was an odd project in the sense that they wanted

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▶ something that was personal – or made you feel like it was very focused on the band. The way that we mixed it was very dry, with very little crowd in it. All the camera work was very close up, so we had this opportunity to mess about with the focal point of how we mixed it. When the camera zooms in on the bass player, the mix is shifting so it feels a bit more personal. Because we wanted to really pioneer some interesting mix techniques we felt, for safety, it would be worthwhile having a broader sort of finger in the air… having like minded people who can talk technical, but who also have that filmic experience was very useful."

People Power

The core Spool team numbers five people. There are three full-time operators: Ben Squires (Re-Recording Mixer), Susan Pennington (Supervising Sound Editor), and Greg Marshall (Technical Director). In the office and marketing department there's Penny Linfield (Creative Director), and Mary Kearns (Post-Production Co-ordinator). Marshall: "Part of Penny's role is trying to expand the good name of what we're doing, building our client list – which she's great at. Mary's our co-ordinator. She does the accounts, the bookings, the client liaison. She's actually a producer in her own right… so she's got a lot of production background.

Past the main team, Spool has a handful of freelancers on its books – operators with good track records and who know the Spool protocol.

Administration, or rather 'ease and efficiency of administration' is obviously big consideration for the Spool operation. One major asset developed for project management at the studio is a bespoke database that has taken over a year to put together by one of the technicians at Confetti (it was discovered that he was a database programmer in a former life). The shiny new database works at 'both ends', apparently. This means that engineers can log day-to-day activities, faults, versions, updates, and changes; and the database can assess client budget targets and realities, and will even e-mail interested parties on hours used and budget caps, and so on.

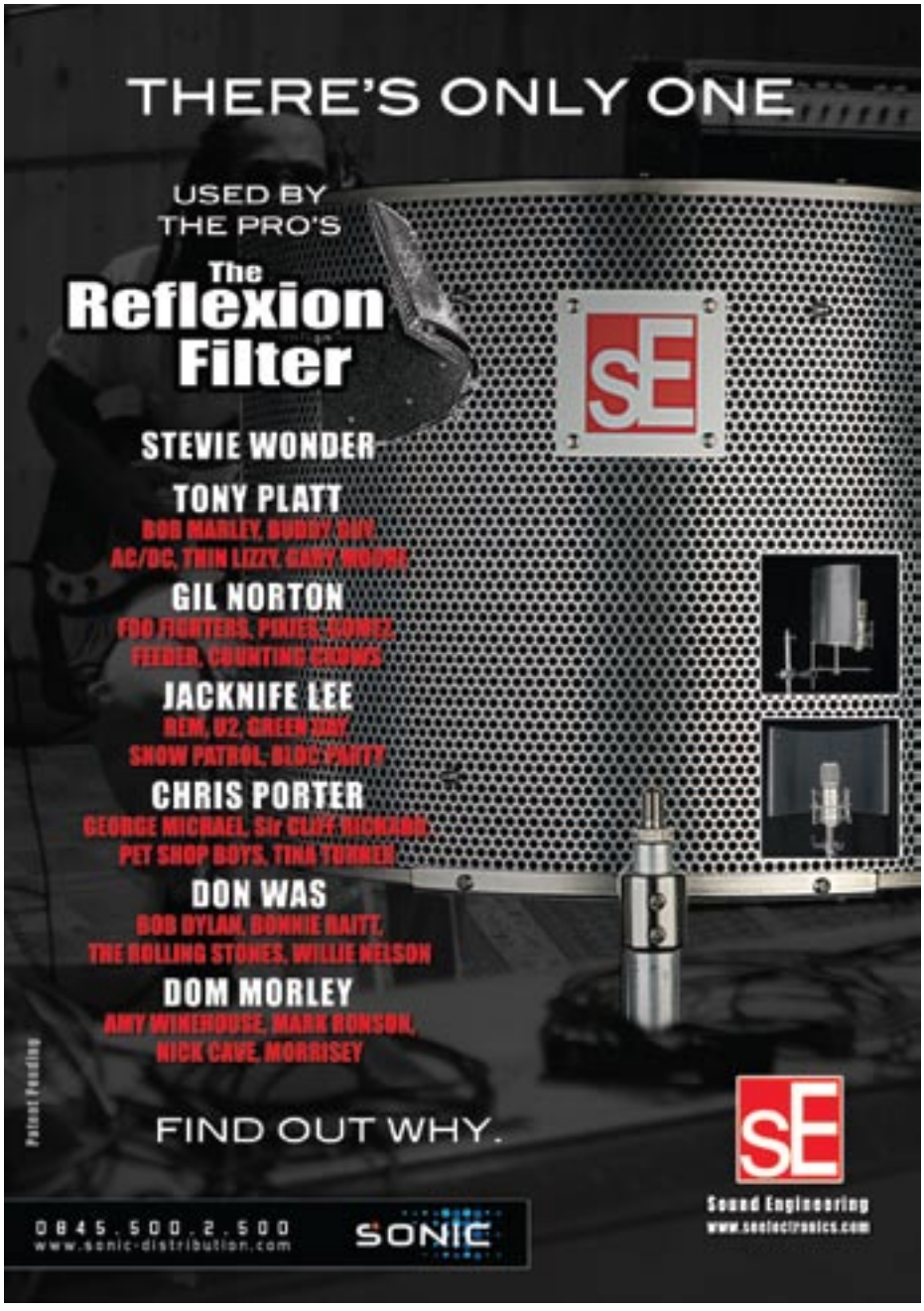
Asset management for sound libraries is taken care of by Sound Miner. True to form, the Team has bent this to its own purposes as well, and it's now driven not only by key words but by thesaurus data, just to make sure each search is as comprehensive as possible. The central library can be updated by anyone who contributes, and indeed the collection is quickly moving towards the half a million sounds mark.

Next Reel, Please

Spool is moving on rapidly. It now complements a bigger picture – Nottingham's newest addition to its media armoury, Antenna. It can also claim to be party to one of those rare educational establishments that has some sense of the outside world – where graduates might one day hope to find gainful employment.

There is ongoing interaction between the two arms – top students can get the opportunity to contribute at Spool with work experience and more, while Marshall is actively involved in developing the post production courses at Confetti. Confetti Media Group owner and MD Craig Chettle takes it a step further: "There's also talk about launching an actual internship where we can give jobs to top students… From day one when a student enrolls, they know that if they do the best they can, they come out the other end and there's a potential job there for them."

In this light, it's even more important that Spool continues to be a successful, respected, commercial, audio post production house. The new facilities are a major step forward and should ensure a healthy future. AM



INFORMATION

Spool Post Production
Ⓦ **www.spoolpost.com**
White Mark Limited
Ⓦ **www.whitemark.com**

BUSINESS SENSE

Craig Chettle is the founder and owner of the Nottingham, UK-based Confetti Media group, which includes Spool Post Production amongst other contributing parts. Paul Mac spoke with Chettle during his visit to Spool:

Paul Mac: The Confetti Institute was the first part of the business. How did that start and how did it lead to Spool?

Craig Chettle: I literally set it up because I used to be a tour manager and FOH engineer, and when I came back from tours was kicking around for a few weeks or months and looking for something to do. There was this little place in a deprived area of Nottingham that a mate got me involved in to come and teach sound stuff to the kids. One Christmas Eve someone broke in and stole most of the equipment, then came back in on New Year's Eve and took the rest.

I looked to set something else up, and searched round for a few months and found this place in the centre of town… The first year was hell… I was doing tours, putting money into the thing to get it going, but after that first year, word got around and then it started to become more and more popular… In the first year there were ten people, second year there were 50, third year there were 200, and it went like that – an exponential growth spurt.

…I added more staff, and then I got to a point probably towards the late '90s where other things were starting to be of interest to people. We were being approached if we could do sound for film, and we said, 'we probably can, let's give it a go'. And it sort of carried on like that, down to ridiculous things like we now have quite a big division that goes out and designs interiors and spaces for other colleges and centres around the country [Constellations].

PM: The Antenna media centre and business services interior is nearly complete with serviced offices, meeting spaces, bar, restaurant, and so on. What happens next?

CC: The next step really for us is to populate this centre with organisations and businesses that 'get it'… There's plenty of business centres where the doors are always closed, and you don't really interact much, but we're trying to get this flow of work between us… Then there's that punching above your weight argument. A 'virtual' member, on the day they decide to come in and meet a big client, can appear to be part of the centre – it's that feel good factor that we are behind them.

…And there will be bit of that agency thing going on, where we can genuinely put bigger teams together for projects as well… I've got friends who are really good graphics people, but any time they go for a bigger job and say 'it's just me', most bigger companies will just say 'forget it, there's no depth'.

PM: A successful media business is not as common as we would all like these days. What's the secret?

CC: I think it's that we're all really keen to learn… We're not saying we're better than anybody, we just say 'let's try and find out how you do that sort of thing', and it's got to this level. Greg and I have worked together for years, and White Mark were fantastic on this, but we were still in there, with them, doing it, as we have been on the other projects – because we're nosy and want to know about it… That adds to our toolkit the next time we do a job for ourselves or others… It's being hungry to keep learning.

INFORMATION

Ⓦ **www.confettimediagroup.com**

KRK Systems Ergo

KRK Systems Enhanced Room Geometry Optimisation system, a.k.a ERGO, is a delightful box of improvements for troublesome monitoring environments, says RANDY POOLE.

THE REVIEWER

RANDY POOLE is a Nashville-based engineer/mixer and owner of the Poole Room Studio in Franklin, TN. www.thepooleroom.com

Studio monitoring manufacturer KRK Systems has introduced ERGO, a Firewire-based standalone monitor controller/acoustic correction unit. ERGO utilises the RoomPerfect acoustics correction system developed by Lyngdorf Audio in Denmark. This software offers a level of room acoustics correction never achieved before in this price range.

Features

EGRO is designed to be placed between your audio outputs and monitor inputs (whether you use active or external amp-powered speakers). The ERGO unit offers an A/B speaker selector, a large illuminated volume knob, Focus/Global button, calibration button, a headphone output, and a Firewire interface.

ERGO accepts three forms of input: analogue (which goes in via KRK A/D and back out through AKM AK4396 120dB SNR D/A), Firewire (streaming from a DAW or audio application), and S/PDIF digital. According to KRK, "using ERGO with analogue or S/PDIF inputs allows for a true 'standalone' mode, once the measurements are taken, no connection to a computer is required.

All processing resides within the ERGO unit; the analysis software is Mac- and PC-compatible. It uses ▸

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multiple measurements and proprietary algorithms to analyse your room in 3D with an included measurement microphone. ERGO employs 1,024 dynamic filters, with sample rates as high as 96kHz with an Analog Devices 400MHz Blackfin digital signal DSP chip, to apply electronic corrections to the speaker output to match your listening environment. "The 3D model preserves the good characteristics of the room, while correcting the bad, thereby creating a more accurate mix position," offers KRK ERGO product documentation.

In Use

Connecting ERGO was fairly easy. First, I installed the software on my computer and then connected the Firewire and audio cables to ERGO. Next, I connected the included measurement microphone to ERGO and switched the unit to Calibrate mode. Then, I opened up ERGO calibration software, running the process where it asked for just a few (it can ask for more than a few) mic test positions to take room samples; it even tells you where and how to adjust overall room SPL level. Finally, ERGO completed its processing, storing the room analysis within itself automatically.

I first set up the ERGO in my acoustically treated 15x22-foot mix room; I currently use very little corrective EQ on my monitors, mainly just to smooth out the crossover frequency. The calibration process by ERGO only took three test samples of this room in order to achieve a '98 percent room correction' sample. Note that ERGO only works on frequencies between 20Hz and 500Hz, deemed the truly problematic frequency range in environments such as my own.

After ERGO had completed its correction, we compared the results with and without correction. With ERGO, my room – with which I was already 'truly happy' – immediately became more focused in the stereo images with deeper lows, with a clarity that just wasn't there before. The system character did not sound EQ'd comparing ERGO in-line and ERGO bypassed, but overall results were notable and really nice.

For a true test of what the ERGO could improve upon, we moved to my second engineer's mostly untreated 15x18-foot mix room with dreaded low ceilings. After set-up and feeding ERGO eight (yes, eight!) different microphone locations, ERGO achieved a '99 percent room correction' sample. This time, the correction results from the ERGO had major differences in low-end EQ in an A/B comparison with unprocessed signal. The results were nothing short of stunning for such an untreated room with obvious acoustic 'issues'. ERGO made an almost unusable room into a room that was quite good. With ERGO, this second room's EQ response was drastically better, and the centre image was much more focused. We left the ERGO set-up in this environment for some time to see if there were any differences in long-term observations, and we remained impressed.

The other unique feature included with ERGO is the Focus/Global button. In Focus mode, it optimises all settings for the mix position; Global mode widens the sweet spot for more listeners. We tested this feature in both rooms, and while it does what it says, both my assistant and I found it quite subtle.

The notable negative I found in ERGO was a bit of zipper noise while turning its volume knob, but it was only truly discernable when no audio is present.

Summary

I've heard room-correction technologies that were built into brand-name speakers before, and I must say that I was not a fan, except of one quite expensive version. Yet I found ERGO's room correction technology to be phenomenal. ERGO provides great converters, amazing algorithms, 1,024 dynamic filters, and many useful features. I'm not aware of anything else on the market that can touch it for the price. ERGO's RoomPerfect technology is so good, I would imagine that we will see it in future KRK products. AM

INFORMATION

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Ⓐ KRK Systems, LLC., 3000 SW 42nd Street, Hollywood, FL 33312, USA
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Ⓔ service@krksys.com

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Procedural Audio

The Future Of Sound Design?

Andy Farnell explains a PD patch at a recent workshop.

The next big thing, or something of a geek fest? RICHARD WENTK reports on developments that could revolutionise the sound design industry.

Digital tools and techniques may have transformed sound design over the last few decades, but sound to picture remains enormously labour intensive. Compare a modern movie with a headliner from thirty years ago, and the differences are obvious. Not only has sound quality improved dramatically, and cinemas now present in full surround, but the density of sound effects in a typical blockbuster is vastly higher than it used to be.

Similar changes are happening in game sound. But in both media, sound has always lagged behind graphics, and most sound design is still based on sample playback. In graphics terms, using samples is rather like trying to assemble a blockbuster special effects sequence in Photoshop from a selection of still photos. Something more flexible is needed, and recent approaches to audio may soon start to shift the industry in a more flexible direction.

It Starts With A Game

Gordon Durity of Electronic Arts in Canada explains what this means in practice. "We have our own proprietary audio tools, systems, and libraries. These make us platform agnostic, and able to prototype and deliver on multiple platforms simultaneously and quite rapidly. As a general rule, we abstract the logic layer, from the data layer, and this all sits on top of the sound library, which is our audio driver. Our audio development system is very data-driven, modular, and has tools optimised and focused on speech, sfx, interactive music, and event-based mixing. This allows the sound artist to create content and implement play back methods and behaviour without undue programmer intervention."

> "I'm looking forward to seeing a standard, so that sound designers can implement or perhaps buy complete models and slot them into both game and movie productions."

This sounds abstract – so how does it work in a real game? Gordon gives one example: "Our in-house sound effect behaviour tool, AEMS (Audio Event Management System), is very similar to Cycling 74's MaxMsp. This allows our sound artists to design and create quite complex audio behavioral modules. Due to the flexibility of this system, we have been able to investigate and implement various types of audio behavioral modeling. While attempting to recreate continuously undulating noised-based sounds like flags flapping, ocean wave activity, small crowds, etc, we've had success with granular synthesis – cutting up a sound file into small particles (400ms-1200ms) and writing in tiny fade handles (50ms-100ms) at the top and end of each file. By monitoring the time remaining to finish playing a sample, a value range can be used to trigger another sample to playback during an overlap period creating a smooth crossfade in the sound.

"Elsewhere, instead of using a ton of unique one-shot and large samples to express the various sound combinations needed in a fighting game, we've had success in using smaller samples, layering them up in real time, and constantly modulating them based on game physics. For example, in a superhero game you may have a scenario where characters have different states like normal, shielded, and powered-up. Then there are sweetener sub-tones for impact, crackles, ripples, and so on. The usual approach is to create one-shot samples for each combination. ▸

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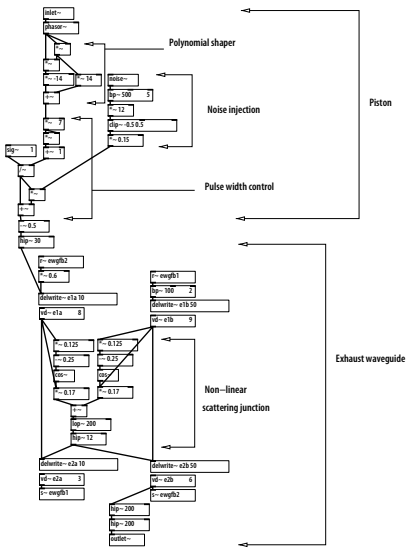

Building a helicopter engine in PD – each part of the network models a feature of a real helicopter engine and rotor.

We've been using game logic to control sample layering, so that harder hits add more sub-tones, and the character states switch between different sample groups automatically."

Getting Procedural

So effectively game sound becomes live, and more closely integrated with the action. Some sound developers are pushing to take this process even further, to create closer links between both game and movie animation and sound synthesis. Andy Farnell has consulted on a number of games including projects for Disney, and is part of a research effort and industry push towards what has become known as Procedural Audio – game and movie sound animation which does exactly this.

As he explains, the key change isn't in the individual synthesis techniques used in a project, but the concept as a whole. "I was building audio models using digital synthesis and it occurred to me that it was possible to generalise and abstract what I was doing. In outline, Procedural Audio is about breaking the system down into three layers – an interaction model, a synthesis method, and an implementation layer. This isn't the same as physical modelling, because that only covers the synthesis layer, and a project could use any number of different synthesis techniques, from sample playback, to FM, to subtractive analogue, to custom DSP. So I prefer the term physically-informed model – we start from the physics (of the desired physical sound source), and then we simplify until we get something that fits the CPU budget."

Library Foundations

But doesn't that make development times too long to be practical? It's an obvious question, given that in the current state of procedural audio, some models are taking six months to a year to develop. "The development time of the models is very interesting. If you were designing a graphics engine from scratch for the first time it would take a very long time – years, in fact. But of course graphics has standards like OpenGl now, which means code can be reused, and the techniques used to generate graphics in real time have become partly standardised.

"Synthesis models can be re-used in the same way, e.g., a rigid body model of something like a vase or a glass could be reused in other applications. And similar objects have similar sound calls – called methods – so you can reuse other parts of the logic too. For example all rigid objects need a scrape method, a drop and a tap method. Once a model is available – or perhaps a selection of models– designers can trigger sounds by including a method in the code with some parameters. At the moment Procedural Audio is perhaps five to ten years ahead of R&D. But I'm looking forward to seeing a standard, so that sound designers can implement or perhaps buy complete models and slot them into both game and movie productions."

In the meantime, an important factor in the appeal of PA approaches is that the tools are free, and anyone can experiment with them. Conventional VSTis and hardware synthesisers and processors are too limited for PA. The ideal PA tool is a free audio and DSP software library with a feature known as an API – Application Programming Interface. Game developers can build the library into a game and then tell it what to do via the API. They can also create pre-built models with a simpler interface and allow composers and sound designers to drive them through a collection of predefined parameters.

PD For PA?

Perhaps surprisingly, a good selection of tools has been available for a decade or so. A popular choice is a patchable audio construction kit called Pure Data, or PD. PD is related to generic patching environments like Native Instruments' Reaktor. It's also a direct descendant of the patchable modular synthesisers that first appeared in the late 1960s and still have their devotees today.

But there are three differences. The first is virtuality – the only limit to the number of modules that can be used is set by available processor power. Designers can use an impressive library of pre-written modules. They can also save

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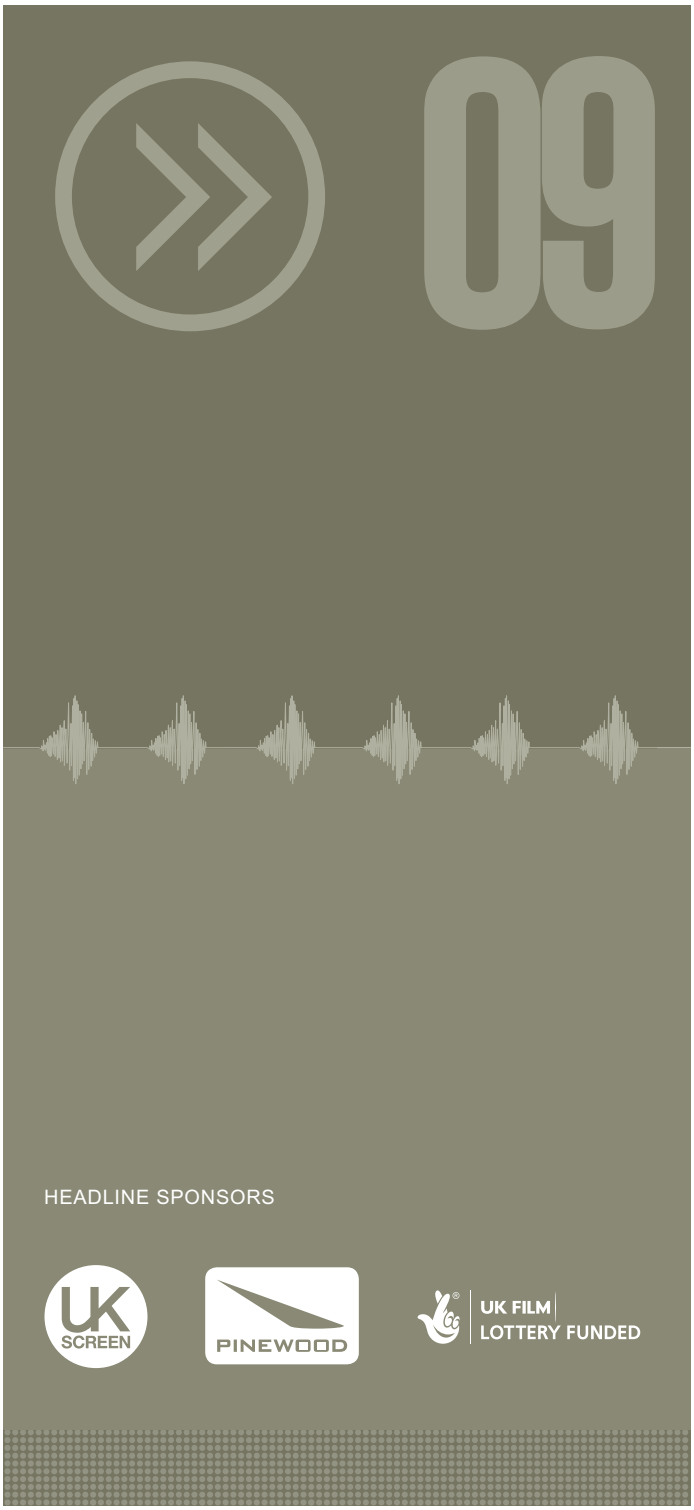

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complete patches, group them into a single sub-patch, and re-use them – a process known as encapsulation. Expert developers can add their own modules in C++ or Java.

The second difference is more fundamental. Where synthesisers process control voltages and audio, PD can process audio, text, and numbers. This might seem like an eccentric option, but it's the key to PD's flexibility. The text processing features can split and combine messages to create sequences of events, and also perform automatic event recognition. This feature was originally developed for MIDI event and sys-ex processing, where being able to recognise and process blocks of data and text was essential. But it was soon extended to more generalised event processing. For example, it's trivial in PD to create a note processor that responds to different MIDI notes by firing off a different series of events – middle C can play a canned MIDI sequence, C# can play it backwards, D might randomise the settings in a compressor patch that the audio is being sent through. There's almost infinite control combined with infinite responsiveness, because both incoming and generated audio can be processed to look for and recognise a set of characteristics, which can in turn drive a network of synthesiser and audio processor modules.

This leads to the third feature, which is external control. Where VST instruments offer a fixed set of parameters, a PD patch with PD's associated API can read and make sense of parameters from an external software source. Parameters can be mapped, sliced, faded, and interpreted in an almost infinite number of ways. This makes it perfect for PA because it can hide an underlying synthesiser and processor behind a simplified interface with just a few parameters. It becomes the programmer's job to design the synthesiser/processor and its interface, and make it simple enough for a sound designer to control with a handful of simplified and more abstract parameters. For example in a car game, control of engine noise could be reduced to speed, tone, and gear number/gear change. Even if the underlying sound-making code uses tens or even hundreds of internal parameters.

Of course it's also possible to create synthesisers and models using conventional procedural languages like C++. Free synthesis libraries are widely available, and in theory designers could drop them into game code. The catch is that writing code to produce audio is unwieldy and not very productive. The advantage of PD is that it lives at a mid-point between the pure DSP synthesis of a procedural language and a familiar visual patching system. This saves development time for the programmer, and also makes it possible to create models that are reusable between projects, perhaps with minor tweaks.

PD has competitors that work at a slightly lower level. Csound is a venerable but rather rigid sound scripting environment that has been in continuous development since the 1960s, accumulating features continually so that it includes examples of most kinds of synthesis. Csound has been used sporadically in games and movie sound design, and it has a working API. It's also free. But as a code-based system, it's unwieldy. While it offers plenty of synthesis options, the language around them is dated and limited by modern standards.

SuperCollider is an alternative free DSP development system with more recent features. SuperCollider is immensely powerful, but it also has a steep learning curve. Sound designers aren't necessarily software developers, and the advantage of a visual system like PD is that it offers a relatively simple environment with modules connected by virtual patchcords.

One To Look Out For

PA's time may not have come yet, but there's no denying the potential of the approach. At the recent Develop conference in Brighton, PA practitioners wowed attendees with impressive demonstrations of a selection of synthesised sound effects, including an uncannily realistic jet engine abstracted from turbine physics. It may be some time before sound synthesis catches up with 3D animation. But no other approach is promising to offer quite so much to sound designers, and to kick start new developments in an industry that has perhaps become a little set in its sampled-based ways. AM

INFORMATION

Pure Data
puredata.info

Supercollider
Supercollider.sourceforge.net

Csound
www.csounds.com

Andy Farnell
(Tutorials, examples and a sound design book introducing PD)
www.Obiwannabe.co.uk

Procedural Audio home page
www.procedural-audio.com

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A Sound Pro's Guide To Video

Editing: Post Production Part 4

The 80s and 90s were a time of big change for non-linear editing, with Avid and Apple making a move into the arena. KEVIN HILTON takes a look at what set the post production world alight 20 years ago.

The early 1990s were the Big Bang for non-linear digital video editing (NLVE). In the previous decade, developers flirted with non-linear using Laser Disc or videotape, but it was not until the end of the '80s when the various systems flying around the television/film universe began to burn up and re-form, creating the foundations of a new editing world.

The landscape still had some way to go in becoming what we recognise now, but the vocabulary was already established by 1991, as documented in Michael Rubin's now standard handbook, *Non-linear: A Field Guide to Digital Video and Film Editing.* Like any language, the one used to describe new forms of editing has been widely used and abused over the relatively short number of years it has been around.

Non-linear itself was coined as a way of categorising editing systems that allowed edits to be made in a way similar to how film is cut, but which does not rely on footage being recorded on to master videotape. Digital and random access are also used to describe modern computer/disk-based editing systems, but these are not synonyms for non-linear or for each other.

Non-Linear Definition

The CMX system of the early 1970s, described in July's Video Guide, was a non-linear system according to how the term is defined today, although the edited material was assembled by a linear mechanism onto two-inch videotape. But it was not digital; video was recorded as analogue FM signals and audio as a pulse amplitude signal on early computer disc platters.

Conversely there are digital editing systems that are not non-linear. Linear cutting using footage on digital videotape is still common, particularly for basic assembly jobs with fast turnarounds where digitising large amounts of material would take too much time.

Random access (RA) was preferred to non-linear in describing the first attempts at this new breed of video editing system. The CMX was described as a Random Access Video Editor (RAVE) but, as Michael Rubin, an editor himself, points out, all editing has aspects of randomness. Editing is based on looking for scenes among the available material; the key to true or effective RA is being able to get to a scene quickly.

Videotape does not facilitate RA, whereas LD and hard drives do, which is why non-linear editing is often equated with random access. There is a distinction, however, with non-linear usually taken to mean a method of editing and RA referring to how material is cued.

Exhibiting Prominently

On the cusp of the '80s and '90s, both terms were prominent in conversations around exhibition halls and on advertisements for the competing systems as this new way of assembling TV programmes and feature films simultaneously fascinated and appalled the industry. By 1991 eight established systems were jockeying for position, with other new technologies appearing or in development.

Computer/disk, digital videotape, and optical disc media were still vying for supremacy at this time. Lucasfilm had shut its Droid Works in 1987 but work continued on the LD-based EditDroid, resulting in a new version during 1990, which was used to cut some sections of Oliver Stone's *The Doors* (1991). Three years later the intellectual rights of the EditDroid were sold to the J&R Film Company, better known as manufacturer of the Moviola upright film editor. Although history has shown that J&R backed the wrong contender, this was still a milestone in the development of non-linear editing and showed that the industry was realising change was inevitable.

Montage Of Words

1991 also brought the prototype of the Montage III, the latest version of a system that had been developed in 1982 using ½-inch SuperBeta videotape. The workstation was described as being like a word processor and so was marketed as the Montage Picture Processor. The system passed through different manufacturers and by its third incarnation was based on DVI (digital visual interface) digital videotape. DVI is a file format described as device independent, which means footage can be stored on any type of media. This has made DVI a key component in non-linear editing as an interface for connecting to video displays and/or graphics accelerators. The connections themselves are based on TMDS (see glossary).

Mark II of the pioneering Ediflex did away with VHS tape in favour of Panasonic write-once discs, while another historic system, CMX, had also made the leap from tape to disc, in this case LD. The CMX 6000 made its debut in 1986 and got a boost by being used on the Bernardo Bertolucci's The Sheltering Sky (1990) and the Paul McCartney concert film Get Back (1991), directed by Richard Lester.

TouchVision was a newish manufacturer on the scene. Bill Rady had founded BHP to develop the TouchVision VHS tape/controller system, which appeared in 1986. In 1991 the product name became the name of Rady's new company, which produced the prototype of a system called D-Vision. This DVI-based product developed into a Windows NT operated workstation that was hailed as Avid on a PC. Problems with distribution and the Matrox 1.0 software, combined with launching before the product was ready, scuppered D-Vision's chances. It was eventually bought in 1997 by Discreet Logic, a later entrant into the non-linear arena.

The three front-runners in computer-based non-linear editing – EMC (Editing Machines Corporation), Avid, and NewTek, with its Video Toaster on the Amiga platform – continued to push ahead with their digital visions. The EMC2 was controlled by a PC, with footage stored on magneto-optical drives, a switch from the original choice of hard disk. It was demonstrated in 1990 running 30 frames per second (fps) digital video, with C-Cube compression for higher resolution. The company was swallowed up by the

TMDS

Transition Minimized Differential Signaling was developed by Sillicon Image as a way to transmit serial data over high-speed links. It is used for a range of digital communication interfaces, primarily DVI (Digital Visual Interface) and HDMI (High Definition Multimedia Interface). TMDS features a coding algorithm to lower electronic magnetic interference over copper connections, as well as being better able to compensate for clock skew over long cable runs. It is derived from IBM's 8b/10b line code but uses a non-standard coding set.

Reference

Non-Linear: A Field Guideto Digital Video and Film Editing, fourth edition 2000, by Michael Rubin, published by Triad

Post Production: Part 4

industrial Dynatech Corporation in 1994.

NewTek has survived from that era but it is the success of Avid that mirrors the development of NLVE, despite the company's subsequent corporate problems. From the humble beginnings of engineer Bill Warner, then working for Apollo Computer, booking a hotel room during the 1988 NAB Convention to show his prototype Avid/1 system to interested parties, the system has fundamentally changed the way films and TV programmes are made.

What, No Sound?

The Avid/1 prototype was operated from an Apollo computer, with footage stored at 15fps on a fixed hard disk. It had no audio capacity. Despite all this the reaction from those that saw it at the demos was positive and Warner went away to develop a 30fps version. He left Apollo, which was taken over by Hewlett Packard the following year, and arranged financial backing to put the system into production. Avid got a big boost when Apple made advances and the system moved to the Mac platform. The first proper versions offered 30fps play-back, with material stored on magneto-optical discs.

Not that there wasn't resistance during Avid's developing years. In the early 1990s scare stories of large sections of films being lost because they had been loaded into Avid went around the business. There was probably some basis in truth for this, as back then computer technology in general was not as reliable as it is now, and even today there is still the need to be certain of back-ups and security.

1992 was a big year for Avid. The first feature film to be completely edited using the system was released and the company continued to develop its core product, the Media Composer, which is still commonly referred to as just 'The Avid'. The debut movie was not auspicious; *Let's Kill All Lawyers* did not star anyone you've ever heard of and is witheringly described on iMDB as being like a bad home movie. It was a start, though, and the number of films being cut on Avid steadily increased in subsequent years.

An Open Transfer

More significant was Avid's development of OMF (Open Media Framework). Also known as Open Media Framework Interchange (OMFI), this is a platform-independent file format designed to enable the transfer of digital media between different software applications. This sounds so straightforward now but back in the early '90s moving data between different types of computer and other equipment was a major undertaking, one that slowed up the whole production process and played into the hands of the anti-NLVE lobby.

OMF cleared away many of the barriers, both technical and political. Because it is a universal protocol OMF has been adopted by all manufacturers of digital and non-linear broadcast and post equipment, making the interchange of material a quick and easy process, regardless of the software program or platforms involved. During 1992 Hollywood post-production facility Encore began using Avid for episodic television series, and by the end of the year there were more than 1,000 of the company's systems in use around the world.

By 1993 Avid was successful, and ambitious enough to go public on the stock markets. This showed that not only was there was a demand for NLVE equipment but manufacturers had the potential to become part of a significant new technological market. In 1990 Randy Ubillos, a programmer working for video component manufacturer SuperMac Technology, designed software to work with the company's range of video digitising cards aimed at the Apple Mac. Originally called ReelTime the program was sold to Adobe, where it became Premiere and the first of the so-called desktop editing systems that would challenge Avid and inspire Apple to develop its own contender.

The major criticism of the first NLVE systems was that they were too much like a computer to use and not enough like old flatbed editing tables. This was addressed by Paul Bamborough, a co-founder of SSL who had started to think about new forms of editing during the early '80s. When he left SSL towards the end of that decade Bamborough was developing a new graphical interface to work with compressed digital video.

Gathering a design and engineering team around him, Bamborough formed OLE Limited to produce a new non-linear editor that became the Lightworks. A prototype was shown during 1991 and the following year LA facility The Post Group became a major user of Lightworks, mainly for episodic television.

Who'd Have Thought It?

During 1993 IBC OLE brought an editor/producer called Andy Zall over from America to extol the virtues of Lightworks. Zall, on his first trip outside the US, talked enthusiastically about his work on a situation comedy that was in production. The assembled journalists thought the premise of a bunch of twenty-something New Yorkers sitting around drinking coffee and talking about their lives wouldn't set the world on fire. A year or so later *Friends* was the biggest thing on television.

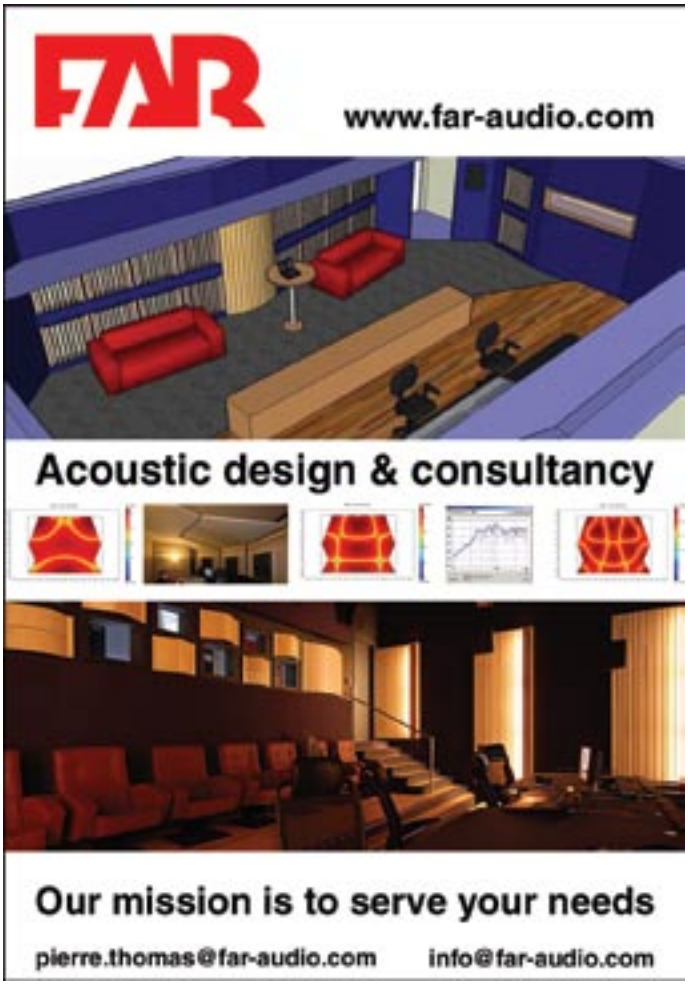
In the next Video Guide: the continuing development of Lightworks and Avid, Adobe Premiere makes its mark and the big breakthrough of Apple QuickTime.

news

Avid is supporting the new HP Z series of workstations by certifying the Media Composer, NewsCutter, Symphony Nitris DX, and Avid DS editing and compositing systems to run on the Z800 and Z400 PC platforms.

The new computer systems are able to handle all file-based formats in use today, which Avid sees as giving its users the opportunity to produce more complex effects and projects.

"High performance, reliability, and enhanced productivity are critical requirements for all of our customers, who are constantly working under rigid deadlines," said Dana Ruzicka, Vice President of strategic alliances at Avid. "These new HP Z workstations will empower our PC-based customers to push the limits of their creativity by providing a powerful and flexible platform that can handle the rigors of complex editing and effects – allowing them to produce the best end result each time."



FIELD REPORT

The Darmstadt Staatstheater in Germany underwent major redevelopment in 2004, including a new technology infrastructure, with a stage and control system, and a Studer Vista 8 at FOH with PIP modules in the facility's amps centrally controlled and monitored on the console via the Harman HiQnet System Architect. More recently it's added a Vista 7 in its recording studio, and now both consoles share resources using Studer's new RELINK Resource linking I/O Sharing system.

www.studer.ch

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QSC Audio has broadened the scope of its established Technical Service Group to provide 24/7 support for its newly-launched Q-Sys environment, a digital audio signal routing and processing technology with complete system monitoring and control. John Newlander, QSC Director of Technical Services, says that the customer support will be in the form of a global, regionally-based, 24/7 post-sales technical back-up dedicated to Q-Sys product.

www.qscaudio.com

FIELD REPORT

The Sugar Reef Club, on the Italian Island of Elba, chose a K-Array PA recently for the Tony Levin Band concert series. K-Array's Leo Dani specified just two KH15s and two KO40s would be necessary to easily fill the space. The sell-out concerts were reported to be a complete success. Sugar Reef typically hosts acts on most weeks throughout the busy summer season.

www.k-array.com

FIELD REPORT

RG Jones Turns Warmonger… And Martin Goes Martian

In one of this year's more ambitious tours, *War Of The Worlds - Alive On Stage* was taken to venues around the UK and Europe. RG Jones supplied a complex Martin Audio Synco-based sound system to cope with a 10-piece band, 36-piece string orchestra, five singers, and the voice of narrator Richard Burton. RG Jones FOH Engineer Simon Honywill took on the main challenges, which included attempting to "…convey the honeyed tones of Richard Burton to thousands of people along with the huge sound of the band and orchestra and surround sound effects."

The RG Jones team flew the main PA of up to 48 Synco W8LCs and 16 W8LMs, depending on venue, very wide and high upstage, supplemented by a pair of eight deep Synco W8LM hangs arrayed as stereo infills. L-Acoustics ARCS provided surround sound effects.

Honywill mixed FOH on a Digidesign combination of a D-Show and a Profile, using automation throughout 25 scenes.

RG Jones
www.rgjones.co.uk
Synco Europe Network
www.synco-network.com

Adlib Supply Bed For Nails

The Nine Inchers' Sound Better Than Ever

It continues to be a busy Summer for Adlib as another recent project involved the supply of audio production and crew for Nine Inch Nails' final UK Arena shows at Manchester Evening News Arena and the O2 Arena in London, UK. The Liverpool-based company has toured with the band before, and US-based FOH Engineer Pete Keppler has also used them on a number of previous occasions.

Keppler specified a JBL VerTec system, with ADLIB's Tony Szabo as Systems Engineer & Crew Chief. In Manchester, they utilised 14 VT4889s with 14 VT4880A flown subs per side for the main hangs, and 16 VT4889s per side for the side hangs. The subs were powered from Adlib's new Labgruppen PLM14000 amplifiers, with onboard Lake processing.

Adlib Audio
+44 (0) 151 4862214
www.adlibaudio.co.uk

Eno 'is Audio, He Does

Soundcraft revealed as unsung Apollo 11 pilot

Soundcraft has been out and about a lot recently. Former Roxy Music member Brian Eno celebrated the 40th anniversary of the Apollo 11 moon landing, by introducing the first of two live performances of his 1983 composition *Apollo: Atmospheres and Soundtracks* in the IMAX Cinema at the Science Museum in London. Headtec was appointed by the Science Museum to provide the sound, and Icebreaker's FOH Sound Engineer Alexander Bossew specified a Soundcraft Vi6 digital console. Bossew reportedly made full use of the internal Lexicon reverbs available as the IMAX presented a very dry environment for sound reinforcement.

In other news, the £5million development recently undertaken at the O2 Academy in Birmingham has included two Soundcraft Vi6 digital consoles for FOH and monitors in flight-cased touring packages, with capacity to serve all three stages at the venue.

Also, a 64-channel Vi6 for FOH and 48-channel Vi4 for monitors have been specified for the Nottingham-based Rock City Venue (now 30 years old), with installation by the SSE Audio Group installation project team.

Soundcraft
www.soundcraft.com

Sound Technology (UK)
www.soundtech.co.uk

FIELD REPORT

Eric Clapton and Steve Winwood recently reunited to tour North America, and rental company Sound Image supplied JBL VERTEC line arrays powered by Crown amps to the tour, which used 84 VERTEC full size line array loudspeaker elements, configured in multiple array hangs to provide 270 degrees of audience coverage. The rig included 14 VT4889s per side for the main hangs, 12 VT4889s per side for outfill, with another eight per side for rear coverage in typical arena venues.

www.jblpro.com

NEW PRODUCTS

Cadac will be showing its new-found strong commercial foundations with the introduction of its new Live1 sub-£8,000 consoles, complete with digital interface IO and networking capability. That technology will also be apparent on the new Cadac ME2 mic pre-amp which takes two J-Type mic pre-amps and EQs, and slots them in a single rack unit with AES output and stereo mix bus. Of course, the long-awaited flagship S-Digital Production Console will also be there to show off its digital engine and analogue heart.

www.cadac-sound.com

SHOW NEWS

Recognising the important part that Sound Reinforcement plays in the health of the pro audio industry, live sound will be a major focus at this year's 127th AES Convention in New York. Live Sound co-chairs Henry Cohen (pictured) and Mac Kerr have devised a broad programme of events from an assessment of the White Spaces issue to innovations for meeting the increasingly urgent need for environmental responsibilities.

www.aes.org

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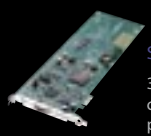

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Working The Festival Field

Rocking At Glastonbury 2009

PAUL HOLMES talks to the people behind the big stages about the sound of Glastonbury '09.

Since its inception in 1970, the Glastonbury Festival of Contemporary Performing Arts has set the standard for open-air festivals. The site is a bubbling hot pot of eclectic, dynamic performances and carefree revelry in an atmosphere fuelled by mystical tales of bygone eras. A rich vein of legendary musicians have graced the event, with Marc Bolan kicking off the first ever musical celebration in 1970. This virgin extravaganza saw a gathering of 1,500 fun lovers paying just £1 to get in, with milk from the farm chucked in for free. Fast forward to 2009 and the sell-out crowd has reached 137,500, making Glastonbury the largest green field music and performing arts festival in the world.

With such a prestigious heritage at stake, the sound crews responsible for the musical spectacles need to be of the highest order. We spoke to the companies that fit the bill, namely RG Jones Sound Engineering, Skan PA Hire, and APR Audio, which provided sound engineering for the Pyramid, Other, and Jazz World stages respectively.

Pyramid Stage – RG Jones Sound Engineering

When the Queen inevitably requests that, 'one would like a PA to belt out one's favourite ABBA tune', who does she turn to? Should she ever feel the need for a stadium sound version of *Dancing Queen*, then RG Jones is the company to make it happen. By Appointment to Her Majesty since 2006, which also saw RG Jones' celebrate its 80th anniversary, the company can claim to be the first English sound company able to display the Royal Warrant.

2007 marked their first time at the Pyramid Stage, a position they've occupied ever since, with 2009 also boosting them into Reading, Leeds, and Latitude festivals. Project Manager Steve Carr is delighted with such a busy and reputable summer schedule and believes the changing expectations of what a sound crew should represent at a festival has worked in their favour. Carr said, "As the music industry is becoming more and more corporate, and the corporate world has always been sensible and professional, more and more stuff is at stake, people's safety for example, and quality's expected. People are now turning to companies that built their trade on that. For us it's nothing new but for the people that run the festivals I think it's a refreshing change."

The slickness of this year's operation was intensified by the BBC's growing coverage, broadcasting almost every act in an ever-decreasing gap after the live performance itself. Carr employed a flip-flop system shared between two Midas XL4s that allows sound engineers to get a good hour with the desk before their band goes on stage. Essentially, one desk is used to mix the band on stage while behind the backdrop, another band can set up and line check on the other mixer. Not only does this provide engineers with valuable practice time, it also ensures that the BBC get a head start on the next act. Ninety six-lines of audio split five ways between FOH, back-up FOH on analogue, monitors, back-up monitors on analogue lines, and TV. Carr explains further, "You can imagine there's potential for confusion and interface problems. We do a lot of pre-production work to ensure that no one will ever turn up with a system that we are not prepared for. ▸

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The main PA was made up of two 16-deep hangs of Synco by Martin Audio each side of the stage, augmented by 35 Synco WS318X triple eighteen-inch sub-bass cabinets, with one rear-facing cabinet placed out of phase and precisely delayed between every pair of forward facing cabinets. This new cardioid sub-bass array design effectively cancels-out rearwards bass spill, sparing the stage and backstage from unwanted sub-bass while improving directionality. Extended coverage was provided by a line of four sixteen-deep hangs of Martin Audio W8LC compact cabinets. Monitors were made up of Synco low-profile dual-concentric CW15A 15-inch wedges powered by Synco amp racks, plus a Synco drum sub-bass system with a triple-18-inch WS318X, a 2x15-inch Synco STS subwoofer, and a 15-inch Synco CW15A wedge for the top end.

Powered by Synco drive racks and aligned by XTA AudioCore software, the main PA belted out headline performances from Neil Young, Bruce Springsteen, and Blur, with the latter confirmed as the highlight of Carr's career so far – "They blew me away. They were awesome. The whole thing, the atmosphere, the performance, the sound, the vibe that all of their guys gave. They were an absolute pleasure to work for and with."

Other Stage – SKAN PA Hire

The Other Stage has been running for years with SKAN providing the technical expertise to get the dance-orientated arena thumping along nicely. This year saw headline acts from Bloc Party, Franz Ferdinand, and The Prodigy, who SKAN also worked with at the Download Festival in June.

This year's PA and monitoring system was dominated entirely by d&b audioteknik equipment. The main PA consisted of a J-line array, with fourteen J8s and four J12s making up the main hangs, while the side hangs consisted of ten J8s. A six-strong Q1 cabinet centre hang was implemented for the first time along with eight J-INFRA subs, designed to extend the frequency response of the J-Series system down to 27 Hz. Bolstering the bass further were 24 J-SUBs. The impressive side-fill was designed with The Prodigy in mind, and comprised eight flown Q1s plus three B2-SUBs on dollies beneath the stage. Monitoring was comprised of 24 M2 wedges joined by C7 drum subs, with both the monitoring and PA systems driven by D12 amps. On FOH duty were two Midas XL4s along with two Heritage 3000s.

Lloyd Williams, Systems Technician at SKAN, has seen his role at Glastonbury change over the years, "I used to work on stage at Glastonbury, and the last two years I've been the systems guy out front looking after all the engineers and whatnot. It's a nice transition from running around on stage plugging microphones into being the dude out front." Williams has also recognised changes in the equipment that bands are turning up with, saying, "There was a turning point over the last few years where the festival production would say that the only people able to bring in their own audio equipment were the headliners. What's been happening more and more is that technology is getting better and better, and the size of the equipment is getting smaller in most cases. Production can say to us, 'Is it going to be a problem if this band who are on half-way through the day bring in their own board?' And it's like, 'No, of course not,' because we want to make people happy and make sure they have a good gig." It's not just FOH either but monitors too, with many bands realising that if it doesn't sound great on-stage,

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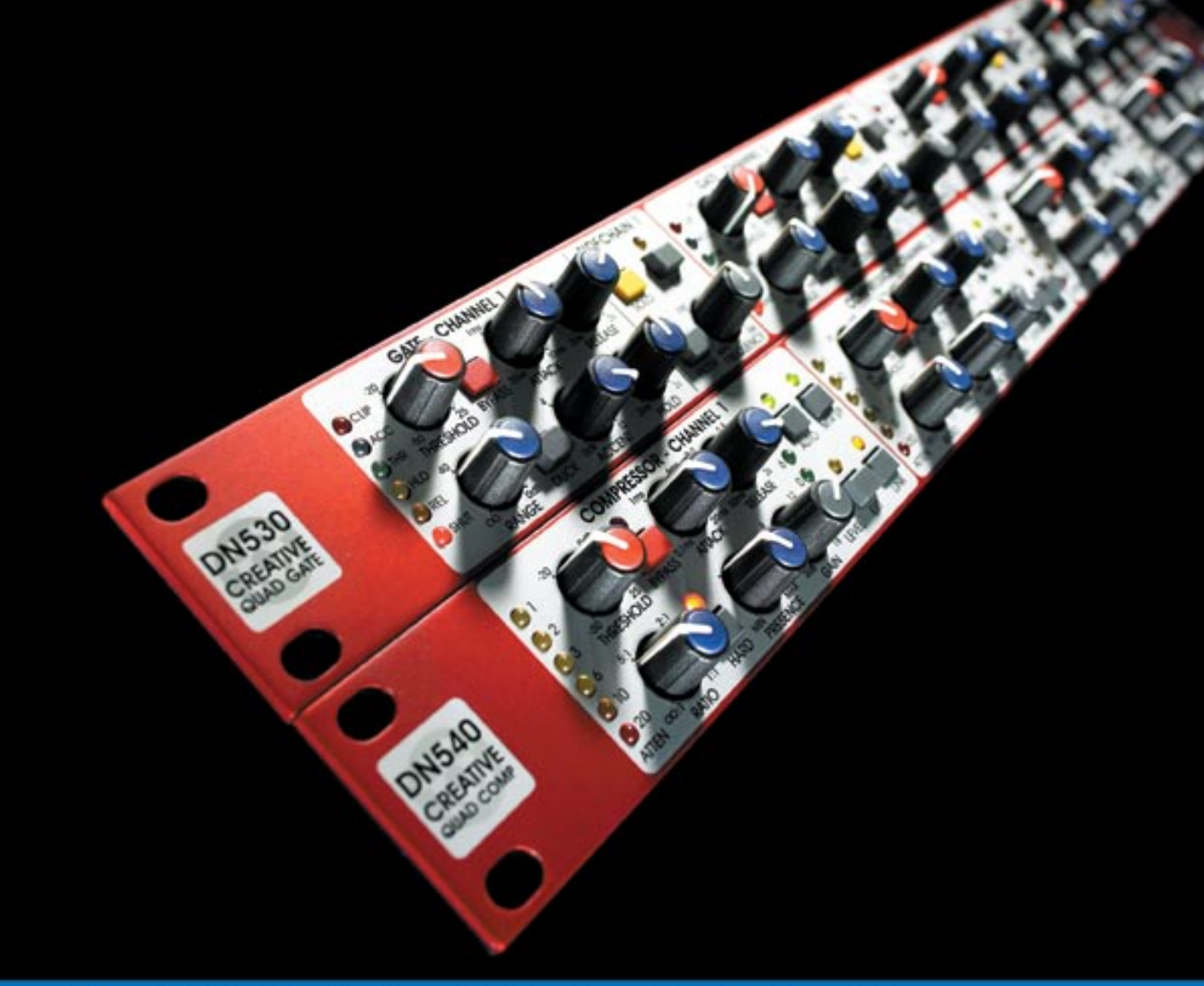

The Creative Series: DN530 Quad Gate and DN540 Quad Comp

With the unrelenting absorption of signal processing into digital mixing consoles, outboard gear now has to contribute something extra special merely to justify its space in the rack. The new Creative series from Klark Teknik does just that. It brings some exciting new tools to the audio party. And with four channels of processing compressed into just 1U, unlocking your creative potential doesn't mean unlocking another rack.

Transient Accenting

DN530 Creative Quad Gate

The key to silent gating is the shape of the gain transition curve that is used to ramp up the signal level when the gate opens (attack) and fade it back down when the gate closes (release). The DN530 features a carefully mapped logarithmic attack envelope, to ensure fast, silent gating.

The DN530 Quad Gate also boasts "Transient Accenting", a new creative feature providing an easy way to enhance the attack envelope beyond merely opening the gate. This can provide up to 12dB of additional transient energy. Its primary application is to provide additional impact on drums and percussion instruments, although it can be used to enhance the impact of many instruments, including acoustic stringed instruments such as guitar and piano. Transient Accenting is unique in that it allows the operator precise control over the amount of enhancement applied to each channel of processing, and can be applied independently of the gating function.

Dynamic Enhancement

DN540 Creative Quad Compressor

Throughout the history of dynamics processing many different types of compressor have been produced using many different types of gain technology. Each type has a distinctive sound. Users have found many applications which benefit from these often unintentional compression audio artefacts, taking the use of compressors far beyond simple dynamic range reduction, sometimes even generating the complete reverse; dynamic enhancement.

It is with these creative applications in mind, that the DN540 Quad Compressor features a unique "Harmonic Enhancement" presence control. When this is engaged, the harmonic content of the material is preserved in a more natural and dynamic state, in a spectral area where we are most perceptive to detail. This allows more compression to be applied, providing greater control of programme dynamics, without the source material sounding dull, lacking in detail and unnatural. Dynamically enhanced compression can produce results that are very similar to multiband compression but with only one additional control required (as opposed to many) it is considerably less time consuming to set up and typically does not require constant tweaking during a performance.

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► then it probably isn't going to sound great from out front either.

Jazz World Stage – APR Audio

The Jazz World Stage started life as the first extra music stage after the Pyramid stage, and has evolved to showcase a wide variety of Jazz and world music with, "many types of funky fusion in between." Since 2005, APR Audio has engineered sound for the stage that Crew Chief Matt Gunter believes is, "where the real musical talent plays."

The main PA consisted of Electro-Voice's (EV) X-Line Xvls and Xvlt cabinets flown from 16m towers, plus 32 Xsubs. Front fill duties were taken up by EV's new XLE181 cabinets, while monitoring was taken care of by EV Xw15A wedges and X-Array cabinets for side and drum fills. Gunter explains, "We had EV NetMax (Digital Matrix System) at FOH for my system control because we had a fourth console at FOH as well. Because we used EV P3000s, we had 44 amplifiers driving the system. I used the amplifier DSP for time aligning the boxes and EQ'ing the arrays. And then I used the NetMax to do overall system tuning and stuff like that. Not that I had to do much anyway. I'm quite happy about that."

Another element that pleased Gunter was the amount of guest engineers who opted to use digital over analogue. A Yamaha PM5D was taken last year, but with only one band choosing to use this instead of the Midas Heritage 3000, Gunter deemed a digital board this year surplus to requirements. However, after speaking to Rob Hughes at Midas, Gunter was offered a PRO6 to take along. After a few more phone calls, the offer had risen to two PRO6s plus Rob Hughes and Richard Ferriday from the Midas team. "To have that much support there was amazing," enthused Gunter. "Hughes was a godsend on that console because when engineers came up it was like, 'oh H3' and then Rob would come in and say, 'have you seen this?' Ten minutes later Rob would come over and go, 'they're going on the PRO6.'" Overall, eleven out of the 24 bands chose to go digital, with Manchester-based electronic outfit Lamb the most appreciative. "Lamb used the digital and he was blown away with it. He did have an awesome sound for that band. They were absolutely stonking," said Gunter, adding. "No-one topped Rolf Harris though. They had to shut the fields."

Gunter had nothing but positive words for the overall organisation of the festival, which he believes is getting slicker and more professional by the year. After a meeting with the festival organisers, APR suggested improvements to address some sound issues. One solution was to rotate the stage, "And they did it. They rotated the stage a bit more, they moved the stage, put a new stage in, put more track-way in for lorries and stuff like that. From that meeting, me and Andy (the boss at APR) just walked away with a more positive feeling about Glastonbury this year. And we've walked away with an even more positive feeling because they were just so nice and accommodating. They just worked really well and were very happy with the overall production."

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HIGH DEFINITION POWERED LOUDSPEAKERS

Mackie HD Series HD1531

The 'HD' stands for 'high definition', and deservedly so, says STROTHER BULLINS.

The Mackie HD Series of wood-enclosure portable, active PA loudspeakers includes two models: the three-way, three amp HD1531, and two-way HD1521. I reviewed the HD1531, which features 1800W (peak) "of ultra-efficient Class D Fast Recovery™ amplification". According to Mackie, Fast Recovery circuitry prevents the HD's output from saturating, ensuring better sound when amps are clipped (a thoughtful design for the real world).

I/O, controls, and indicators – mounted above the long vertical heat sink on the HD1531's rear panel – include XLR main input; XLR loop out; three-band contour digitally-controlled EQ with sweepable midrange (80Hz, 100Hz to 8kHz, and 12kHz, all +/-3dB), on/off button and LED; a -6dB to +6dB master level control; a 'power light on' button and LED (indicating whether the speaker's grille-mounted blue LED is on or off); a red Thermal LED, lit when amplifier and heat sink temperature exceed a safe operating level (while the LED is red, input signal is muted); and a bi-colour Sig/Limit LED (green with signal present, yellow when the HD's built-in limiter kicks in). Below the heat sink and to the right resides an On/Off switch and IEC power cord socket.

Three digital processing-related features, hence the HD Series' 'high definition' moniker, are Mackie-patented acoustic correction algorithms, transducer time alignment, and a phase-coherent electronic crossover; in its signal flow, all processing takes place directly after the EQ circuit. More information on this EAW-developed technology is available on Mackie's website.

The HD1531's tour-grade enclosure is made of 15mm birch plywood, featuring two well-designed handles and a dozen fly points for flexible rigging options; it weighs 96lbs. Dimensions are 35 x 19 x 18.25 inches. According to Mackie Product Manager Greg Young, there are important reasons why the HD Series evolved beyond some enclosure elements of the SA Series: "We've departed from the SA design, which uses plastic end caps (top and bottom), in favour of the all-wood cab. This sets us apart not only from our legacy model, but also from other products in this price range. All wood is obviously more rugged/durable than plastic, but there is also an acoustic advantage to all wood: plastic resonates, whereas wood is (more) rigid, so you get less unwanted resonance with all-wood. Plus, an all-wood enclosure lets us shrink the cab and still maintain good LF extension, whereas plastics require a larger cab to get the same LF extension, or more power. Really, we did both – went with all-wood and more power. The HD1531 ends up being 6- to 9-inches shorter than our competitors' three-way boxes, and we have much more output before LF starts to distort."

In Use

For this evaluation, I used a pair of HD1531 powered loudspeakers in a variety of gigs and settings over two months, with and without a powered subwoofer (18-inch, 1,400W peak power), depending on the show.

Not to overdo it, but I must express how detailed and clean these HD1531s sound; their chameleon-like ability to adapt to every place I used them was always surprising and impressive to everyone in earshot, myself included. In the words of a well-seasoned guitar-player on a random night, not having heard the HD1531s previously when standing out front during sound check, "Whoa – awesome." It sounded like a well-tweaked pro live sound rig, except there was virtually no 'tweaking' going on (other than setting gain levels per input and applying some reductive EQ per channel). Clearly, EAW and Mackie's investment in R&D on the HD's DSP features were well spent. Further, the HD's built-in EQ proved to be useful in several acoustically challenging rooms; its frequencies and range of adjustment are well chosen. All in all, 'High Definition' is a deserved moniker for the HD1531.

As an HD feature, Mackie refers to the HD1531 as 'ultra-compact and lightweight'. Not surprisingly – because huge sound in live audio rarely comes in small, lightweight boxes – these well-built HD cabinets are not something I preferred to load in/out, pole mount or fly, etc, alone. So while I don't find them to be lightweight at nearly 100 pounds, for what they do, I guess they are. I did discover that their size, low-end extension, and high power often allowed me to leave that 150lb powered subwoofer at home – definitely a good thing.

Summary

During my time with them, these new Mackie loudspeakers proved themselves deserving of a "whoa – awesome" description. The HD Series clearly benefits from a combination of newly applied, EAW-borne transducer and DSP technology with sensible design elements that have long defined Mackie live sound products.

The HD1531 is built and designed well enough to please seasoned professionals and small- to medium-sized live venues, they are built to deliver what modern audiences and club owners (and even discriminating professional engineers) naturally associate with a high-quality live music event. The HD1531 is a worthwhile investment in a large portable PA speaker. AM

INFORMATION

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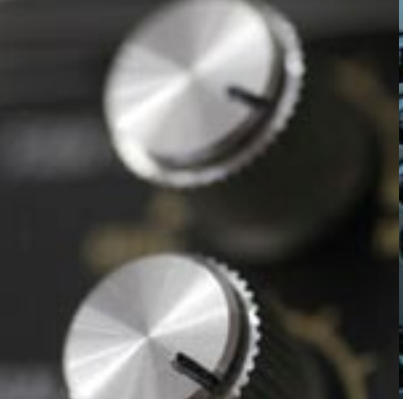
THE REVIEWER

STROTHER BULLINS is the Reviews and Features Editor for *Pro Audio Review.*



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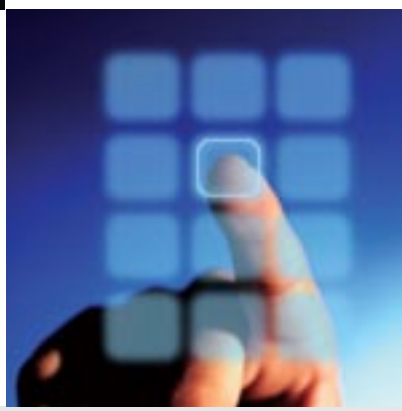

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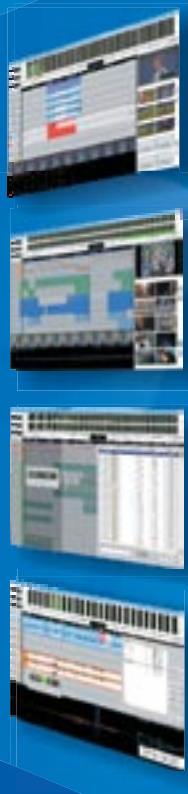

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